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The invention relates to a novel method for identifying a subject CC predisposed to a disorder associated with ion channel dysfunction. The CC method comprises ascertaining if at least one of the genes encoding ion derived from the subject has any of 134 nucleotide sequences. The method comprises ascertaining if at least one of the genes encoding ion of the invention has nootropic, neuroprotective, inctropic, antipyretic, completely tranquiliser, analysis, neuroprotective, inctropic, antipyretic, completely completely activity. A polynucleotide of the invention acts as an contained agonist, or ion channel antagonist. The methods, isolated con channel agonist, or ion channel antagonist. The methods, isolated conclair activity and contained antagonist. The methods, isolated contained are useful for the diagnosis and treatment of epilepsy and/or a contained periodic paralysis, myotonias, malignant hyperthermia, cardiac arrhythmias, episodic ataxia, migraine, Alzheimer's contained, chronic/acute pain, Bartter's syndrome, polycystic kidney disease, byperinsulinaemic hypoglycaemia of infancy, cystic contained colour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 13; SEQ ID NO 136; 106pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
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05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
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ID AAE2
particularly voltage-gated sodium channel protein.

particularly voltage-gated sodium channel proteins are useful as hybridisation probes for screening libraries and assessing intron/exon boundaries of NHP gene can be used to design primers for use sites, introns that can be used in diagnostics and assessing in amplification assays to detect mutations within the exons, splice sites, introns that can be used in diagnostics and pharmacogenomics. NHP products are useful for drug screening effective in the normal function of MHP in the body, and nucleotide constructs encoding products in vivo. These genetically engineer host cells to express NHP bioreactors in the body delivering a continuous supply of a Nur.
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                                                                                                                                                                                                                          The present sequence is novel human protein (NHP), ior NHP share structural similarity with mammalian sodium
                                                                                                                                                                                                                                                                                               Claim 1; Page 47-50;
                                                                                                                                                                                                                                                                                                              Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
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DB; AAD32842.
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Mulley JC, Ha

(WALL/) (BION-)

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RESULT 3
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The present sequence is novel human protein (NHP), ion channel protein. MHP share structural similarity with mammallian sodium channel proteins particularly voltage-gated sodium channel proteins. NHP oligonucleotides are useful as hybridisation probes for screening libraries and assessing gene expression patterns. Sequences derived from regions adjacent to the intron/exon boundaries of NHP gene can be used to design primers for use in amplification assays to detect mutations within the exons, splice sites, introns that can be used in diagnostics and pharmacogenomics. NHP
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                                                                                                                                                                                                                                                                     Claim 1; Page .52-55; 83pp; English.
                                                                                                                                                                                                                                                                                                                         Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
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gene therapy; bioreactor; mental disorder; biological disorder;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LEXICON GENETICS INC.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAD32843.
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Pred. No. 1.4e-18;
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뭉 8

The present sequence is novel human protein (NHP), ior NHP share structural similarity with mammalian sodium

ion channel protein.

channel

proteins

Claim 1; Page

75-78; 83pp; English.

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Best Local S
Matches 28
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                                                              Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                   15-AUG-2001; 2001WO-US025650
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                                                                                                                                                                                                                                                                                                                                                                                                                       Homo
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gene therapy; bioreactor;
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                                                                                                                                                                                                                      16-AUG-2000; 2000US-0225989P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     medical disorders and diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nucleotide sequences are useful for drug screening effective in
                                                                                                                                     2002-280757/32.
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                                                                                                                                                                Mathur D;
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Pred. No. 1.4
0; Mismatches
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disorder;
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screening, diagnosis and in gene therapy of biological disorders

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RESULT 5
AAE20519
AIX AAE2
XX AAE2
XX O1-J
DT 01-J
DE Huma
XX Huma
XX Huma
XX Homc
XX medi
XX medi
XX WO2C
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Best Local :
Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug
                                                                                                                     WPI; 2002-280757/32.
N-PSDB; AAD32848.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
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28; Conservative
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                                                                                                                                                                                                    Mathur D;
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100.0%; Pred. No. 1.4e-18;
tive 0; Mismatches 0;
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RESULT 6
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      Turner CA,
                                                  (LEXI-) LEXICON GENETICS INC.
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1056
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28; Conservative
   Mathur B,
                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers 981
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   Mathur
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Pred. No. 1.4e-18;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CC are useful as hybridisation probes for screening libraries and assessing gene expression patterns. Sequences derived from regions adjacent to the control/exon boundaries of NHP gene can be used to design primers for use cc in amplification assays to detect mutations within the exons, splice cc in amplification assays to detect mutations within the exons, splice creatment of symptomatic or phenotypic manifestations of perturbing the cc treatment of symptomatic or phenotypic manifestations of perturbing the commal function of NHP in the body, and nucleotide constructs encoding the products are useful to genetically engineer host cells to express NHP cc products in vivo. These genetically engineered cells function as continuous supply of a NHP, a NHP concators in the body delivering a continuous supply of a NHP, a NHP concators in the body delivering a continuous supply of a NHP, a NHP concators in the body useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP genession and to produce genetically engineered host cells to express the products in vivo. NHP nucleotide sequences may also be used as part of reagents in diagnostic assays, for identifying other cellular gene cregulation. The NHP penduces are useful for generating antibodies, as compounds that are useful in the treatment of mental, biological or medical disorders and diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                          Human; novel human protein; NHP; gene therapy; bioreactor; mental medical disorder.
                                                                                                                                                                                                                                                                                                                                  Human ion
15-AUG-2001; 2001WO-US025650.
                                      21-FEB-2002
                                                                          WO200214498-A2
                                                                                                                             Misc-difference
                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                                                                    01-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                                           AAE20517,
                                                                                                                                                                                                                                                                                                                                                                                                                                         AAE20517 standard; protein; 1453 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               with mammalian sodium channel proteins, NHP oligonucleotides particularly voltage-gated sodium channel proteins, NHP oligonucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; Page 43-46; 83pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB; AAD32841.
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                                                                                                                                                                                                                     sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 YMIFFVLVIFLGSFYLINLILAVVAMAY 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YMIFFVLVIFLGSFYLINLILAVVAMAY 426
                                                                                                                                                                                                                                                                                                                                  channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sequence is novel human protein (NHP), ion tructural similarity with mammalian sodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A,
                                                                                                                                                                Location/Qualifiers
                                                                                                                               1067
                                                                                                          /note= "Encoded by RCA
                                                                                                                                                 'note= "Encoded by MTG"
                                                                                                                                                                                                                                                                                                                                protein #8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 28; DB 5;
Pred. No. 1.5e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                         voltage-gated sodium channel;
disorder; biological disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1442;
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RESULT 8
ADB785pt
ID ADB7
XX ADB7
XX ADB7
XX ADB7
XX Huma
XX Huma
XX Huma
XX meur
XW mute
XW mute
XW meph
XW ion
XX ion
XX Synt
OS Synt
OS Synt
OX WO20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CC are useful as hybridisation probes for screening libraries and assessing gene expression patterns. Sequences derived from regions adjacent to the control of the control
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                         mutein; mutant; ion channel; ion channel subunit; ICS; nootropic; neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic;
                                                                                                                                                                                 antidepressant; antiparkinsonian; neuroleptic; tranquil
nephrotropic; antidiabetic; ophthalmological; epilepsy;
                                                                                                                                                                                                                                                                                                                                                                     04-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1453 AA;
                                                                                                                                                                                                                                                                                                                 Human sodium channel subunit mutant SEQ ID NO:140
                                                                                                                                                                                                                                                                                                                                                                                                                         ADB78596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADB78596 standard; protein; 1795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present sequence is novel human protein (NHP), ion channel proteins NHP share structural similarity with mammalian sodium channel proteins particularly voltage-gated sodium channel proteins. NHP oligonucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Page 70-73; 83pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB; AAD32846.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-AUG-2000; 2000US-0225989P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          399 YMIFFVLVIFLGSFYLINLILAVVAMAY 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           μ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YMIFFVLVIFLGSFYLINLILAVVAMAY 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mathur B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and diseases
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 28; DB 5;
Pred. No. 1.5e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1453;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NHP oligonucleotides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
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WO2003008574-A1

Synthetic

ion channel dysfunction; human.

Homo sapiens.

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RESULT 9
ADB78597
ID ADB7
XX
AC ADB7
XC ADCT
X
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                         mutein; mutant; ion channel; ion channel
neuroprotective; inotropic; antipyretic;
                                                                                                                         Human sodium
                                                                                                                                                                     04-DEC-2003
                                                                                                                                                                                                                    ADB78597;
                                                                                                                                                                                                                                              ADB78597 standard; protein; 1855 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1795 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 13; SEQ ID NO 140; 106pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mutation events.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-JUL-2001; 2001AU-00006452.
05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (BION-) BIONOMICS LTD. (WALL/) WALLACE R W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08-JUL-2002;
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                                                                                                                                                                                                                                                                                                                                                                                  1 YMIFFVLVIFLGSFYLINLILAVVAMAY 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 28; DB 7; I
ilarity 100.0%; Pred. No. 1.7e-18;
Conservative 0; Mismatches 0;
                                                                                                      channel subunit mutant SEQ ID NO:141.
                                                                                                                                                         (first entry)
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Scheffer
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                          subunit; ICS; nootropic;
antiarrhythmic; antimigraine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1795;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
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                   RESULT 10
AAE20511
ID AAE20
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Best Local :
AAE20511 standard; protein; 1962 AA
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                                                                                                                                          1 YMIFFVLVIFLGSFYLINLILAVVAMAY 28
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The invention relates to a novel method for identifying a subject CC predisposed to a disorder associated with ion channel dysfunction. The CC method comprises ascertaining if at least one of the genes encoding ion CC channel submits (ICS) has undergone a mutation event so that a cDNA CC of the invention has nootropic, neuroprotective, inotropic, antipyretic, containing raine, antidepressant, antiparkinsonian, CC neuroleptic, tranquiliser, analgesic, nephrotropic, antidepressant, antiparkinsonian, CC ophthalmological activity. A polynuclectide of the invention acts as an nucleic acids, polypeptides, antibody, selective agonist, antagonist or contained agonist, or ion channel antagonist. The methods, isolated contained activity. A polynuclectide of the invention acts as an nucleic acids, polypeptides, antibody, selective agonist, antagonist or contained, are useful for the diagnosis and treatment of epilepsy and/or a contained are useful for the diagnosis and treatment of epilepsy and/or a contained paralysis, myotonias, analignant hyperthermia, cardiac arrhythmias, episodic attaxia, migraine, Alzheimer's compastenia, cardiac arrhythmias, episodic attaxia, migraine, Alzheimer's compastion, phobic obsessive symptoms, neuropathic pain, inflammatory compastion, phobic obsessive symptoms, neuropathic pain, inflammatory compastion, phobic obsessive symptoms, neuropathic pain, inflammatory pain, chronic/acute pain, Bartter's syndrome, polycystic kidney disease, control of the printed specification, but was obtained in electronic format directly continuess. The present sequence represents a mutant protein of the printed specification, but was obtained in electronic format directly continues of the cont
                                                                                                                                                                                                Sequence 1855 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mulley JC, Ha
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2003-239332/23.
N-PSDB; ADB78636.
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05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
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nephrotropic; antidiabetic; ophthalmological; epilepsy;
ion channel dysfunction; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO2003008574-A1
                                                                         Similarity
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llarity 100.0%; Score 28; DB 7; 101.0%; Pred. No. 1.8e-18; Conservative 0; Mismatches 0;
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Scheffer
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                                                                             Length 1855;
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AAE20511;

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399 YMIFFVLVIFLGSFYLINLILAVVAMAY 426

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cc in amplification assays to detect mutations within the exons, splice sites, introns that can be used in diagnostics and pharmacogenomics. MHP cc nucleotide sequences are useful for drug screening effective in the treatment of symptomatic or phenotypic manifestations of perturbing the cc normal function of NHP in the body, and nucleotide constructs encoding the products in vivo. These genetically engineer host cells function as the broad delivering a continuous supply of a NHP, a NHP cc peptide, or a NHP fusion protein to the body. Nucleotide construct encoding NHP products are also useful in gene therapy for modulating NHP expression and to produce genetically engineered host cells to express CC NHP products in vivo. NHP nucleotide sequences may also be used as part of ribozyme and/or triple helix sequences that are useful for NHP gene cregulation. The NHP polypeptides are useful for generating antibodies, as reagents in diagnostic assays, for identifying other cellular gene compounds that are useful in the treatment of mental, biological or madical discovered as reagents in assays for screening for compounds that are useful in the treatment of mental, biological or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
Sequence 1962 AA;
                                                                                                                                                                                                                                                                                                                                                                                                    gene expression patterns. Sequences derived from regions adjacent to the intron/exon boundaries of NHP gene can be used to design primers for use
                                                                                                                                                                                                                                                                                                                                                                                                                                             particularly voltage-gated sodium channel proteins. NHP oligonucleotides are useful as hybridisation probes for screening libraries and assessing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present sequence is novel human protein (NHP), ion channel proteins NHP share structural similarity with mammalian sodium channel proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; Page 37-41; 83pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference 1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (LEXI-) LEXICON GENETICS INC.
                                       disorders and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAD32840
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                                       diseases
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                                                                                                                                                                                                                                                                                                                                                                                                                           libraries and assessing regions adjacent to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ion channel protein.
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YMIFFVLVIFLGSFYLINLILAVVAMAY 28

Query Match Best Local (Matches

28;

Conservative

0,

Mismatches

Similarity

100.0%;

Score 28; [Pred. No. 1.

DB .9e-18; <u>ن</u> 0,

Length 1962;

Indels

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Gaps

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Sequence 1973

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RESULT 11
AAE20516
ID AAE20
XX Human
XX Human
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                                                                                           cc in amplification assays to detect mutations within the exons, splice nucleotide sequences are useful for drug screening effective in the cc treatment of symptomatic or phenotypic manifestations of perturbing the cc treatment of symptomatic or phenotypic manifestations of perturbing the cc mormal function of NHP in the body, and nucleotide constructs encoding CC NHP products are useful to epentically engineer host cells to express NHP cc products in vivo. These genetically engineered cells function as thoreactors in the body delivering a continuous supply of a NHP, a NHP cc peptide, or a NHP fusion protein to the body. Nucleotide construct encoding NHP products are also useful in gene therapy for modulating NHP ceptide, or a NHP nucleotide sequences may also be used as part cof ribozyme and/or triple helix sequences that are useful for NHP gene cregulation. The NHP polypeptides are useful for generating antibodies, as reagents in diagnostic assays, for identifying other cellular gene compounds that are useful in the treatment of mental, biological or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence is novel human protein (NHP), ion channel protein. NHP share structural similarity with mammalian sodium channel proteins particularly voltage-gated sodium channel proteins. NHP oligonucleotides are useful as hybridisation probes for screening libraries and assessing gene expression patterns. Sequences derived from regions adjacent to the intron/exon boundaries of NHP gene can be used to design primers for use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note= "Encoded by MTG"
Misc-difference 1067
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
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                                                                         medical disorders
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RESULT 12
ABR83185
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AX ABR83
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                                            RESULT 13
AAE20510
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AAE20510 standard; protein; 1998 AA.
                                                                                                                                                                                                                                                                                                                                                                 potentially useful as anticonvulsant, antiepileptic, neuroprotective, analgesic and/or anesthetic agents, e.g. for treating severe myoclonic motor endplate diseases, hypertension, congestive heart failure and and metastatic cancer cell lines). These activities can also be provided by gene therapy vectors that express (I) or the modulators. The sodium channel polypeptides. The present sequence represents a human sodium channel polypeptides. The present sequence represents a human scannel veriant septice variant septice variant septices and splice variant septices.
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Best Local (
                                                                                                                                                                                                                                                                                                                                                Sequence 1981 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to a recombinantly expressed and isolated human SCN1A (sodium channel type 1 alpha-subunit) (1). (1), optionally incorporated into a cell, is used to screen for specific modulators,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Recombinantly expressed sodium channel type 1 alpha subunit, useful in screening for modulators, for treating e.g. epilepsy.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25-FEB-2002; 2002US-0359382P.
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DB; ACF57880.
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                                                                                                                                                                                                                                                                      Similarity
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                                                                                                                         1 YMIFFVLVIFLGSFYLINLILAVVAMAY 28
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                                                                                                                                                                                                                                  ilarity 100.0%; g
Conservative 0;
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Pred. No. 1.9e-18;
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Pred. No. 1.9e-18;
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1 YMIFFVLVIFLGSFYLINLILAVVAMAY 28

Matches Query Match Best Local (

Local

Similarity

100.0%; silarity 100.0%; sometive o;

Score 28; DB 5; Pred. No. 1.9e-1 Mismatches

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The present sequence is novel human protein (NHP), ion channel protein. CC particularly voltage-gated sodium channel proteins. NHP share structural similarity with mammalian sodium channel proteins are useful as hybridisation probes for screening libraries and assessing complete expression patterns. Sequences derived from regions adjacent to the inamplification assays to detect mutations within the exons, splice concludes sequences are useful for drug screening effective in the conclusion of NHP gene can be used to design primers for use sites, introns that can be used in diagnostics and pharmacogenomics. NHP treatment of symptomatic or phenotypic manifestations of perturbing the contrast function of NHP in the body, and nucleotide constructs encoding products are useful to genetically engineer host cells to express NHP concentry in the body delivering a continuous supply of a NHP, a NHP concentry in the body delivering a continuous supply of a NHP, a NHP concentry in the products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP concentry and the products are also useful for generating antibodies, as compounds that are useful for generating antibodies, as products related to NHP and as reagents in departs in diagnostic assays, for identifying other cellular gene compounds that are useful in the treatment of mental, biological or medical disorders and diseases
Sequence 1998 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 1; Page 30-34; 83pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             medical disorder.
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981
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YMIFFVLVIFLGSFYLINLILAVVAMAY 426

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RESULT 15
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Best Local (
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                                                                                                                                                                                                                                                                                                                       The invention relates to a recombinantly expressed and isolated human SCNIA (sodium channel type I alpha-subunit) (I). (I), optionally incorporated into a cell, is used to screen for specific modulators, potentially useful as anticonvulsant, antiepileptic, neuroprotective, analgesic and/or anesthetic agents, e.g. for treating severe myoclonic epilepsy of infancy, stroke, cardiac arrest, hyperkalemic paralysis, motor endplate diseases, hypertension, congestive heart failure and muscular dystrophy also to treat cancer (SCNIA is expressed in prostatic and metastatic cancer cell lines). These activities can also be provided by gene therapy vectors that express (I) or the modulators. The modulators, also antibodies directed against (I), are used to detect sodium channel polypeptides. The present sequence represents a human SCNIA splice variant 33P:SCNIADELp671-681 encoding cDNA
Human sodium channel SCN1A protein SEQ ID NO: 2.
                              10-MAY-2002
                                                              ABB06026;
                                                                                           ABB06026 standard; protein;
                                                                                                                                                                                                                                                                                              Sequence 1998 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Page 148-156; 176pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Recombinantly expressed sodium channel type 1 alpha subunit, useful screening for modulators, for treating e.g. epilepsy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       George AL, Lossin C;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25-FEB-2003; 2003WO-US006010.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  04-SEP-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO2003072751-A2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SCNIA; sodium channel type 1 alpha-subunit; anticonvulsant; analgesic; neuroprotective; anesthetic; cytostatic; cerebroprotective; cardiant; hypotensive; gene therapy; human; splice variant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human SCN1A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABR83184 standard; protein; 1998 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (UYVA-) UNIV VANDERBILT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2003-712725/67.
                                                                                                                                                                       399
                                                                                                                                                                     ACF57879.
                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        splice
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                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        variant
                                                                                                                                                                                                                                                100.0%; Score 28; DB 7;
100.0%; Pred. No. 1.9e-18;
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                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                       426
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RESULT 16
AAB99676
ID AAB99676
AC AAB99
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Best Local S
Matches 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention describes human sodium channels SCNIA and SCNIA. The present sequence represents the human sodium channel SCNIA. SCNIA and SCNIA have been located to the human chromosome 2 long arm, positions 2q24 and 2q24-31 respectively. The sodium channel proteins are useful in studying the physiological mechanism in which excitant cells participate and cause human diseases, and in developing remedies for e.g. familial hypercalcaemic periodic paralysis of extremities and motor endplate
                                                                                                                    24-NOV-2000;
                                                                                                                                                                                                                                                                                                                                                     anticonvulsant;
                                                                                                                                                                                                                                                                                                                                                                             Human; epilepsy; chromosome 2; SCN1A; SCN2A; SCN3A; identification; diagnosis; mutation; chromosome 2q23-q31; neurological disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human adult form of SCN2A protein sequence SEQ ID NO:35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1999 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human sodium channels SCNIA and SCN3A and encoded genes, useful in studying physiological mechanism in which excitant cells participate causes of diseases and developing drugs for motor endplate disease.
                                                           26-NOV-1999;
                                                                                                                                                                                31-MAY-2001.
                                                                                                                                                                                                                                   WO200138564-A2
                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAB99676 standard; protein;
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13-JUN-2000; 2000JP-00177544.
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familial hypercalcaemic periodic paralysis; motor endplate disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2002-098066/13.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12-JUN-2001; 2001WO-JP004956
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YMIFFVLVIFLGSFYLINLILAVVAMAY 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YMIFFVLVIFLGSFYLINLILAVVAMAY 426
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ilarity 100.0%;
Conservative (
                                                                                                                    2000WO-CA001404.
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                                                           99US-0167623P
                                                                                                                                                                                                                                                                                                                                                  neuroprotective
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Pred. No. 1.9e-18;
); Mismatches 0;
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(UYMC-) UNIV MCGILL.

Rouleau

GA,

Lafreniere

RG,

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RESULT 17
AAB99677
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention describes a method (M1) of determining an CC individual's predisposition to epilepsy and/or development of epilepsy, CC as well as predicting the individual's response to medication. The method CC comprises determining the genotype of at least one gene selected from CC shows a linkage disequilibrium. SCN1a, SCN2A and SCN3A are all sodium CC channel genes located on chromosome 2. The idiopathic generalised cc epilepsy (IGE) gene is more specifically localised on chromosome 2q23. CC SCN1A, SCN2A proteins or genes, are useful for treating epilepsy or SCN3A proteins or genes, are useful for treating epilepsy concernive activities. AAH55763 to AAH56164 and AAB99674 to AAB99679 cc invention strikes and proteins given in the exemplification of the present CC invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
Determining a predisposition to epilepsy and/or development of epilepsy comprises determining the genotype of SCN1A, SCN2A and/or SCN3A, or a DNA variant, equivalent, or mutation which shows a linkage disequilibrium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                     WPI; 2001-355945/37.
N-PSDB; AAH55794.
                                                                                                              Rouleau GA,
                                                                                                                                                                                  24-NOV-2000; 2000WO-CA001404
                                                                                                                                                                  26-NOV-1999;
                                                                                                                                      (UYMC-) UNIV MCGILL.
                                                                                                                                                                                                                      31-MAY-2001
                                                                                                                                                                                                                                               WO200138564-A2
                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                   Human, epilepsy, chromosome 2, SCNIA, SCNZA, SCNZA, identificati, diagnosis; mutation; chromosome 2q23-q31; neurological disorder; anticonvulsant; neuroprotective.
                                                                                                                                                                                                                                                                                                                                    Human neonatal form of SCN2A protein sequence SEQ ID NO:36.
                                                                                                                                                                                                                                                                                                                                                                                                                               AAB99677 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2005 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Page 123-130; 268pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Determining a predisposition to epilepsy and/or development of epilepsy comprises determining the genotype of SCNIA, SCNZA and/or SCNJA, or a DNA variant, equivalent, or mutation which shows a linkage disequilibrium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                        Lafreniere RG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ilarity 100.0%; Score 28; DB 4; In 100.0%; Pred. No. 1.9e-18 Conservative 0; Mismatches C
                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                             99US-0167623P
                                                                                                                                                                                                                                                                                                                                                                                                                              Protein; 2005 AA.
                                                                                                    Rochefort D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rochefort D,
                                                                                               Cossette P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cossette P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 2005;
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                                                                                                                                                                                                                                                                                                          identification;
                                                                                              Ragsdale
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
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RESULT 18
ABB83627
AID ABB831
AX ABB831
AX ABB831
AX ABB831
AX Human
AX Hum
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CC The present invention describes a method (M1) of determining an CC individual's predisposition to epilepsy and/or development of epilepsy, CC as well as predicting the enotype of at least one gene selected from CC SCNIA, SCN2A or SCN3A, or a DNA variant, equivalent, or mutation which CC shows a linkage disequilibrium. SCNIA, SCN2A and SCN3A are all sodium CC epilepsy (IGE) gene is more specifically localised on chromosome 2. The idiopathic generalised CC q31. Compounds identified as modulators of the biological activity of SCNIA, SCN2A proteins or genes, are useful for treating epilepsy CC neuroprotective activities. AMIS5763 to AMIS6164 and AMB99674 to AMB99679 CC cligonucleotides and proteins given in the exemplification of the present CCNIA, SCN2A, and SCN3A CDNAS, gene fragments, PCR primers, CC invention
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Best Local S
                                       This invention relates to a human polynucleotide which is complementary to an mRNA transcribed from a "generalized epilepsy with febrile seizure plus" (GERS+)-related gene. The gene is useful for diagnosing GEFS+. The present sequence represents the human GEFS+ protein sequence with SCN2A
Sequence 2005 AA;
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                                                                                                                                                                                                    Claim 10; Page 29-34; 37pp; Japanese.
                                                                                                                                                                                                                                                       A human polynucleotide which is complementary to
a generalized epilepsy with febrile seizure plus
useful for diagnosing GEFS+.
                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-552308/59.
N-PSDB; ABQ79201.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-2000; 2000JP-00334969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-2000; 2000JP-00334969
                                                                                                                                                                                                                                                                                                                                                                                                                                                           (KAGA-) KAGAKU GIJUTSU SHINKO JIGYODAN
(RIKA) RIKAGAKU KENKYUSHO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14-MAY-2002.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; GEFS+; SCN2A; mutant; mutein;
generalized epilepsy with febrile seizure plus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human GEFS+ protein with SCN2A mutation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABB83627;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2005 AA;
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28; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 28; DB 4;
100.0%; Pred. No. 1.9e-18;
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                                                                                                                                                                                                                                                                      an mRNA transcribed from (GEFS+)-related gene
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Similarity

Length 2005;

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                                                  The invention relates to a novel method for identifying a subject predisposed to a disorder associated with ion channel dysfunction. The method comprises ascertaining if at least one of the genes encoding ion channel subunits (ICS) has undergone a mutation event so that a cDNA cc derived from the subject has any of 134 nucleotide sequences. The method cof the invention has nootropic, neuroprotective, inotropic, antipyretic, cantiarrhythmic, antimigraine, antidepressant, antiparkinsonian, comparison to the invention acts as an comparison to the invention acts as an comparison of the invention acts and comparison of the invention of the invention of the i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mulley JC, he
               disease, Parkinson's disease, schizophrenia, hyperkplexia, anxiety, depression, phobic obsessive symptoms, neuropathic pain, inflammato
                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 13; SEQ ID NO 148; 106pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      periodic paralysis, cardiac schizophrenia, anxiety and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Identifying predisposition to an ion channel dysfunction, such periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-JUL-2001; 2001AU-00006452.
05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mutein; mutant; ion channel; ion channel subunit; ICS; nootropic; neuropotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human sodium channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   04-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADB78604 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO2003008574-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        channel dystunction; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    events.
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Pred. No. 1.9e-18;
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disease,
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RESULT 20
ADB78603
ID ADB78603
XX ADB78
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Best Local S
Matches 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 200
N-PSDB;
The invention relates to a novel method for identifying a subject predisposed to a disorder associated with ion channel dysfunction. The method comprises ascertaining if at least one of the genes encoding ion channel subunits (ICS) has undergone a mutation event so that a CDNA derived from the subject has any of 134 nucleotide sequences. The method of the invention has nootropic, neuroprotective, inotropic, antipyretic, neuroleptic, tranquiliser, antipersesant, antiparkinsonian, neuroleptic, tranquiliser, analgesic, nephrotropic, antidiabetic, and ophthalmological activity. A polynucleotide of the invention acts as an ion channel agonist, or ion channel antagonist. The methods, isolated
                                                                                                                                                                                                                                                                                                                                                                                   Identifying predisposition to an ion channel dysfunction, such periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's schizophrenia, anxiety and depression, by detecting encoding-ge mutation events.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Dent's disease, hyperinsulinaemic hypoglycaemia of infancy, cystic fibrosis, congenital stationary night blindness and total colour blindness. The present sequence represent a mutant protein of the invention. The sequence data for this patent is not represented in the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pat_sequences.
                                                                                                                                                                                                                                                                                                                            Claim 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mulley JC,
Berkovic SF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-JUL-2001; 2001AU-00006452.
05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              neuroprotective; inotropic; antipyretic; antiarrhythmic antidepressant; antiparkinsonian; neuroleptic; tranquil nephrotropic; antidiabetic; ophthalmological; epilepsy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2005
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mutein; mutant;
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DB; ADB78642.
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                                                                                                                                                                                                                                                                                                                            SEQ ID NO 147; 106pp; English
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Scheffer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      channel subunit mutant SEQ ID NO:147
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inotropic; antimyretic; antiarrhythmic; antimigraine;
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  neuroleptic; tranquiliser; analgesic;
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RESULT 21
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nucleic acids, polypeptides, antibody, selective agonist, antagonist or commodulator of an ion channel, cells and genetically modified non-human caning are useful for the diagnosis and treatment of epilepsy and/or a disorder associated with ion channel dysfunction, such as hyper- or hypock alemic periodic paralysis, myotonias, malignant hyperthermia, comparation, acradiac arrhythmis, episodic ataxia, migraine, Alzheimer's comparation, phobic obsessive symptoms, neuropathic pain, inflammatory comparation, phobic obsessive symptoms, neuropathic pain, inflammatory comparations, chronic/acute pain, Barther's syndrome, polycystic kidney disease, phyerinsulinaemic hypoglycaemia of infanny, cystic comparations, congenital stationary night blindness and total colour conference in the present sequence represents a mutant protein of the printed specification, but was obtained in electronic format directly xxx
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Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                   Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
                                                                                                                        WPI; 2003-239332/23.
N-PSDB; ADB78644.
                                                                                                                                                                   Mulley JC, I
Berkovic SF,
                                                                                                                                                                                                                                                    18-JUL-2001; 2001AU-00006452
05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
                                                                                                                                                                                                                                                                                                          08-JUL-2002; 2002WO-AU000910.
                                                                                                                                                                                                          (BION-) BIONOMICS LTD. (WALL/) WALLACE R W.
                                                                                                                                                                                                                                                                                                                                            30-JAN-2003.
                                                                                                                                                                                                                                                                                                                                                                      WO2003008574-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                            mutein; mutant; ion channel; ion channel subunit; ICS; nootropic; neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human sodium channel subunit mutant SEQ ID NO:149
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
28; Conserv
                                                                                                                                                                Harkin LA,
?, Scheffer
                                                                                                                                                                                                                                                                                                                                                                                                                                         dysfunction; human.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
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Pred. No. 1.9e-18;
); Mismatches 0;
                                                                                                                                                                        LM, Phillips HA,
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The invention relates to a novel method for identifying a subject

Claim 13;

SEQ ID NO 149; 106pp; English.

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RESULT 22
ADC46947
ID ADC46
XX ADC46
XX ADC46
XX ADC46
XX ACC12
XX ACC12
XX SCN2A
XW VACC1
XX HOMO
XX HOMO
XX HOMO
XX HOMO
XX HOMO
XX II-JA
XX II-JA
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Best Local S
Matches 28
   Disclosure; Fig 9; 67pp; English
                Diagnosing or prognosticating a neurodegenerative disease by detecting the level or activity of transcription or translation products of the gene coding for the voltage-gated ion channel SCN2A.
                                                                                                             17-JAN-2002; 2002EP-00001236, 17-JAN-2002; 2002US-0348674P.
                                                                                                                                     16-JAN-2003; 2003WO-EP000400
                                                                                              (EVOT-) EVOTEC NEUROSCIENCES GMBH
                                                                                                                                                         24-JUL-2003.
                                                                                                                                                                        WO2003060525-A1
                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                       vaccine; Alzheimer's disease.
                                                                                                                                                                                                        SCN2A; voltage-gated ion channel; human; neuroprotective; gene therapy;
                                                                                                                                                                                                                                                 18-DEC-2003
                                                                                                                                                                                                                                                                            ADC46947 standard; protein; 2005
                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2005 AA;
                                                        2003-598580/56.
DB; ADC46961.
                                                                                                                                                                                                                                                                                                                     401 YMIFFVLVIFLGSFYLINLILAVVAMAY 428
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Best Local
                         The present invention describes a method (M1) of determining an individual's predisposition to epilepsy and/or development of epilepsy, as well as predicting the individual's response to medication. The method comprises determining the genotype of at least one gene selected from SCN1A, SCN2A or SCN3A, or a DNA variant, equivalent, or mutation which shows a linkage disequilibrium. SCN1A, SCN2A and SCN3A are all sodium channel genes located on chromosome 2. The idiopathic generalised epilepsy (IGB) gene is more specifically localised on chromosome 2q3-q31. Compounds identified as modulators of the biological activity of SCN1A, SCN2A or SCN3A proteins or genes, are useful for treating epilepsy or other neurological disorders. They have anticonvalsant and neuroprotective activities. AMH55763 cDNAA, gene fragments, PCR primers, oligonucleotides and proteins given in the exemplification of the present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to a method for diagnosing or prognosticating a neurodegenerative disease in a subject, or determining whether a subject is at increased risk of developing the disease. The method comprises detecting the level and/or activity of a transcription or translation product of the gene coding for the voltage-gated ion channel SCN2A. The modulator of an activity and/or of a level of at least one substance is useful for preparing a composition for treating or preventing a neurodegenerative disease, in particular Alzheimer's disease. The current sequence represents the human SCN2A amino acid sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 96-104; 268pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Determining a predisposition to epilepsy and/or development of epilepsy comprises determining the genotype of SCN1A, SCN2A and/or SCN3A, or a DNA variant, equivalent, or mutation which shows a linkage disequilibrium.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human adult form of SCNIA protein sequence SEQ ID NO:3.
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cc gene expression patterns. Sequences derived from regions adjacent to the cintron/exon boundaries of NHP gene can be used to design primers for use in the mplification assays to detect mutations within the exons, splice sites, introns that can be used in diagnostics and pharmacogenomics. NHP conclectide sequences are useful for drug screening effective in the treatment of symptomatic or phenotypic manifestations of perturbing the normal function of NHP in the body, and nucleotide constructs encoding NHP products are useful to genetically engineer host cells to express NHP products in vivo. These genetically engineers function as the body of a NHP products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products are also useful and the products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products are also useful in gene therapy for modulating NHP products in vivo. NHP nucleotide sequences may also be used as part
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence is novel human protein (NHP), ion channel protein. NHP share structural similarity with mammalian sodium channel proteins particularly voltage-gated sodium channel proteins. NHP oligonucleotides are useful as hybridisation probes for screening libraries and assessing gene expression patterns. Sequences derived from regions adjacent to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for screening, diagnosis and in gene therapy of biological disorces.
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The invention relates to a nucleic acid molecule encoding a mutant alpha cubunit of a mammalian voltage-gated sodium channel. The DNA and the polypeptide may be used in the diagnosts of epilepsy, in particular generalised epilepsy with febrile seizures plus, and other disorders cascociated with sodium channel dysfunction. The polypeptide is useful for the screening techniques are employed. The sequences are also useful in the cubunfacture of a medicament for the treatment of a disorder associated with sodium channel dysfunction such as epilepsy, particularly cube with sodium channel dysfunction such as epilepsy, particularly cube mysathenia, episodic atexia, neuropathic and inflammatory pain, cubardiner's disease, Parkinson's disease, Schizophrenia, hyperekphexia and mysteonias. Sequences ABG69289-ABG69293 represent human sodium channel capha 1-subunit (SCNIA) polypeptides of the invention
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ABG69292
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Matches 28
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 53;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; sodium channel alpha 1-subunit; SCNIA; episodic ataxia; epilepsy; generalised epilepsy with febrile seizures plus; myasthenia; sodium channel dysfunction; malignant hyperthermia; neuropathic pain; inflammatory pain; Alzheimer's disease; Parkinson's disease; myotonia; schizophrenia; hyperekplexia; anticonvulsant; analgesic; neuroprotective; nootropic; anti-Parkinsonian; neuroleptic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20-DEC-2001; 2001WO-AU001648.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2009 AA;
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sodium channel proconserved hypothetical protein hy

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ALIGNMENTS

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RESULT 3
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sodium channel protein
               N;Alternate
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A; Residues: 183-188, 'D', 190-305 <SARs
A; Cross-references: EMBL: X61149; NID: 957074; PIDN: CAA43458.1; PID: 957076
C; Superfamily: sodium channel protein
C; Keywords: duplication; ion transport; sodium channel; transmembrane protein; voltage-g
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A;Residues: 1-2005 <NOD>
A;Cross-references: UNIPROT:063509
A;Cross-references: UNIPROT:063509
A;Experimental source: brain
R;Sarao, R; Gupta, S.K.; Auld, V.J.; Dunn, R.J.
submitted to the EMBL Data Library, August 1991
A;Description: Developmentally regulated RNA splicing
A;Reference number: 524803
                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Accession: B25019; S24804

R;Noda, M.; Ikeda, T.; Kayano, T.; Suzuki, H.; Takeshima, H.; Kurasaki, M. Nature 320, 188-192, 1986

A;Title: Existence of distinct sodium channel messenger RNAs in rat brain.
A;Reference number: A93377; MUID:86146901; PMID:3754035
                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: S24804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sodium channel protein II - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 09-Jul-2004
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A;Residues: 1-2005 <AHM>
A;Cross-references: GB:M94055
A;Experimental source: brain
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Ahmed, C.M.; Ware, D.H.; Lee, S.C.; Patten, C.D.; Ferrer-Montiel, A.V.; Schinder, Proc. Natl. Acad. Sci. U.S.A. 89, 8220-8224, 1992
A;Title: Primary structure, chromosomal localization, and functional expression of a A;Reference number: A46269; MUID:92390418; PMID:1325650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sodium channel alpha chain HBA - human
C;Species: Homo sapiens (man)
C;Date: 20-Oct-1993 #sequence_revision 18-Nov-1994 #text_change 21-Nov-1997
C;Accession: A46269
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sodium channel protein
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                                                                                                                                                                                                                               100.0%; Score 28; DB 2; 100.0%; Pred. No. 2.5e-1;
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s 0;
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A; Status: preliminary; translated from GB/EMBL/DDBJ

A; Molecule type: mRNA

A; Residues: 1-1820 < NO2>
A; Cross-references: GB:M22252; NID:gl041048; PIDN:AAA79960.1; PID:gl041049

C; Comment: This membrane glycoprotein mediates the voltage-dependent sodium-ion permeable comment: This sequence contains four highly homologous internal repeats (excluding resident repeat has a similar overall structure containing six subregions located in identification and permeating units are thought to be oriented pseudosymmetrically across. The presence of four homologous structures within this molecule is consistent with the presence of four homologous structures within this molecule is consistent with the presence of four homologous structures within this molecule is consistent with the positive of the presence of sequence of the presence of the p
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A, Title: Structure and function of sodium channel.
A, Reference number: I50536; MUID:87311395; PMID:2442385
A, Accession: I50536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Title: Primary structure of Electrophorus electricus sodium channel deduced A;Reference number: A03178; MUID:85061498; PMID:6209577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A)Cross-references: UNIPROT:P02719; GB:X01119; NID:g62776; PIDN:CAA25587.1; PID:g62777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-1820 < NOD>
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Nature 312, 121-127, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sodium channel protein - C; Species: Electrophorus
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A,Molecule type: mRNA
A,Molecule type: mRNA
A;Residues: 1-2009 cRES>
A;Cross-references: GB:M222253; NID:g1041088; PIDN:AAA79965.1; PID:g1041089
C;Superfamily: sodium channel protein
C;Keywords: duplication; ion transport; sodium channel; transmembrane protein; voltage-
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A;Residues: 177-253 <SAR>
A;Residues: 177-253 <SAR>
R;Noda, M.; Numa, S.
J. Recept. Res. 7, 467-497, 1987
A;Title: Structure and function of sodium channel.
A;Reference number: I50536; MUID:87311395; PMID:2442385
A;Accession: I84764
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R;Sarao, R; Gupta, S.K.; Auld, V.J.; Dunn, R.J.
Nucleic Acids Res. 19, 5673-5679, 1991
A;Title: Developmentally regulated alternative RNA splicing of A;Reference number: S40782; MUID:92051314; PMID:1658739
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C;Jate: 30-Uun-1988 #sequence revision 30-Uun-1988 #text_change 09-Jul-2004
C;Accession: A25019; S40783; T84764
R;Noda, M.; Ikeda, T.; Kayano, T.; Suzuki, H.; Takeshima, H.; Kurasaki, M.;
Nature 320, 188-192, 1986
A;Title: Existence of distinct sodium channel messenger RNAs in rat brain.
A;Reference number: A93377; MUID:86146901; PMID:3754035
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A; Residues: 1-2009 < NOD>
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Best Local :
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Electrophorus electricus (
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28; Conserv
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C;Superfamily: sodium channel protein
C;Keywords: duplication; glycoprotein; ion transport; membrane protein; sodium
F;111-41,555-807,989-1281,1311-1341/Region: duplication internal repeats I, II
F;111-141,555-585,989-1019,1311-1341/Region: S1 of repeats I through IV
F;150-171,597-620,1033-1057,1353-1376/Region: S2 of repeats I through IV
F;177-197,626-643,1062-1079,1381-1398/Region: S3 of repeats I through IV
F;204-224,651-671,1092-1112,1417-1437/Region: S4 of repeats I through IV
F;204-224,651-711,1132-1152,1454-1474/Region: S5 of repeats I through IV
F;244-264,691-711,1132-1152,1454-1474/Region: S6 of repeats I through IV
F;379-402,767-799,1236-1264,1544-1567/Region: S6 of repeats I through IV
F;379-402,767-799,1236-1264,1544-1567/Region: S6 of repeats I through IV
F;379-402,767-799,1236-1264,1544-1567/Region: S6 of repeats I through IV
F;205,278,288,317,591,690,797,1160,1174,1806/Binding site: carbohydrate (Asn)
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T43161
                                                                                                                                                                                                                                                                                                            A;Title: Neural expression of a sodium channel gene requires cell-specific A;Reference number: Z22320; MUID:95033215; PMID:7946338
A;Accession: T43161
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R;Klugbauer, N.; Lacinova, L.; Flockerzi, V.; Hofmann, F. EMBO. 114, 1084-1090, 1995

A;Title: Structure and functional expression of a new member A;Reference number: S54771; MUID:95237189; PMID:7720699

A;Accession: S54771
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A;Residues: 1-2049 <CKA>
A;Residues: 1-2049 <CKA>
A;Cross-references: UNIPROT:Q25150; EMBL:D17311; PIDN:BAA04133.1
                                                                                                                                                                                                                                                                                                                                                                                                                                          sodium channel protein TuNaI - sea squirt (Halocynthia roretzi)
C;Species: Halocynthia roretzi
C;Datc: 11-Jan-2000 #sequence_revision 11-Jan-2000 #text_change
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;Species: Homo sapiens (man)
;Date: 27-Oct_1995 #sequence_revision 03-Nov-1995 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                          Accession: T43161
                                                                                                           Query Match
Best Local
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Best Local Similarity
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                                                                                                                                                                            sodium channel; transmembrane protein
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                                                                                                             Similarity
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VIFLGSFYLINLILAVVAMAY 469
                                            VIFLGSFYLINLILAVVAMAY 28
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C;Species: Homo sapiens (man)
C;Date: 30-Jun-1992 #sequence revision 30-Jun-1992 #text_change 09-Jul-2004
C;Accession: JS0648; A42099
R;Wang, J.; Rojas, C.V.; Zhou, J.; Schwartz, L.S.; Nicholas, H.; Hoffmann, E.P.
Biochem. Biophys. Res. Commun. 182, 794-801, 1992
A;Title: Sequence and genomic structure of the human adult skeletal muscle sodium A;Reference number: JS0648; MUID:92134303; PMID:1310396
A;Accession: JS0648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Gene: SkM1
C;Superfamily: sodium channel protein
C;Keywords: duplication
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ann. Neurol. 31, 131-137, 1992
A;Title: Primary structure of the adult human skeletal
A;Reference number: I51964; MUID:92246457; PMID:1315496
A;Accession: I64893
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C;Keywords: duplication
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A;Crose references: GDB:125181; OMIM:170500
A;Map position: 17023.1-17025.3
A;Introns: 91/3; 131/2; 161/2; 204/2; 235/1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;McClatchey, A.I.; Lin, C.S.; Wang, J.; Hoffman, E.P.; Rojas, C.; Gusella, Hum. Mol. Genet. 1, 521-527, 1992
A;Title: The genomic structure of the human skeletal muscle sodium channel capacities number: 154323; MUID:93338444; PMID:1339144
                                                                                                                                                                                                          JS0648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
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A;Molecule type: DNA
A;Residues: 1-1835 <RES>
A;Cross-references: GB:L01983; NID:g337992; PIDN:AAA75557.1;
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C;Date: 02-Jul_1996 #sequence_revision 02-Jul-1996 #text_change 20-Aug-1999
                                                                                                                                                                                     sodium channel alpha chain -
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Matches 20
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100.0%; Pr/
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k; Pred. No. 1.4
0; Mismatches
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1.4e-11;
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71.4%; 5 100.0%; Pr

Score 20; Pred. No.

DB 2; 1.4e-11

Length 1836 Indels

484/3; 536/1; 615/3;

PID:g292487

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Gaps

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Mismatches

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C.Superfamily: nodum channel protein
P.129-150/Domain: transmembrane #status predicted <PR2>
F.191-210/Domain: transmembrane #status predicted <PR2>
F.191-210/Domain: transmembrane #status predicted <PR3>
F.191-210/Domain: transmembrane #status predicted <PR3>
F.191-210/Domain: transmembrane #status predicted <PR3>
F.291-236/Domain: transmembrane #status predicted <PR3>
F.201-236/Domain: transmembrane #status predicted <PR3>
F.202-236/Domain: transmembrane #status predicted <PR3>
F.203-236/Domain: transmembrane #status predicted <PR3>
F.204-1089/Domain: transmembrane #status predicted <PR3>
F.205-2163/Domain: transmembrane #status predicted <PR3>
F.206-1186/Domain: transmembrane #status predicted <PR3>
F.206-1186/Domain: transmembrane #status predicted <PR3>
F.2149-1189/Domain: trans
     R;George, A.L.
Ann. Neurol. 31, 131-137, 1992
A;Title: primary structure of th
A;Reference number: 151964; MUID
A;Accession: 151964
A;Status: preliminary; translate
A; Molecule
                                                                                                                                                            sodium channel alpha chain SCN4A, skeletal muscle - C;Species: Homo sapiens (man) C;Date: 24-May-1996 #sequence_revision 24-May-1996 # C;Accession: I51964
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I51964
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C;Superfamily: sodium channel profrac
C;Keywords: Ampliants
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A;Title: Temperature-sensitive mutations in the III-IV cytoplasmic loop region of the sk A;Reference number: A42099; MUID:92154689; PMID:1310898
A;Accession: A42099
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A; Residues: 1-1836 < WAN>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gene: GDB:SCN4A
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preliminary; translated from GB/EMBL/DDBJ
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A.I.; Van den Bergh, P.; Pericak-Vance, M.A.; Raskind, W.; Verellen,
                                                 ructure of the adult human skeletal |
| IS1964; MUID:92246457; PMID:1315496
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100.0%; Pr/
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Pred. No. 1.4e-
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1.4e-11;
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A;Cross-references: UNIPROT:P35499; GB:L04236; NID:g292485; PIDN:AAB59624.1; C;Genetics:
A;Genetics:
A;Gene: GDB:SCN4A
A;Cross-references: GDB:125181; OMIM:170500
A;Map position: 17q23.1-17q25.3
A;Introns: 91/3; 131/2; 161/2; 204/2; 235/1; 346/1; 367/2; 414/3; 484/3; 536/C;Superfamily: sodium channel protein
C;Keywords: duplication; skeletal muscle
                               Query Match
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A;Molecule type: mRNA
A;Molecule type: mRNA
A;Residues: 1-1951 <KAY>
A;Residues: 1-1951 <KAY>
A;Residues: 1-1951 <KAY>
A;Residues: 1-1951 <KAY>
A;Rosidues: 1-1951 <KAY>
A;Rosidues: 1-1951 <AY
A;Note: 270-Ile, 278-Leu, 355-Thr, 513-Lys, and 1059-Arg were also found
C;Superfamily: sodium channel protein
                                                                                                                                                                                                                                                                                FEBS Lett. 228, 187-194, 1988
A;Title: Primary structure of rat brain sodium channel III deduced
A;Reference number: S00320; MUID:88137594; PMID:2449363
                                                                                                                                                                                                                                                                                                                                                                   R;Kayano, T.; Noda, M.; Flockerzi, V.; Takahashi, H.; Numa, FEBS Lett. 228, 187-194, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                      sodium channel protein III - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Jun-1989 #sequence_revision 30-Jun-1989 #text_change
C;Accession: S00320
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F;120-458,561-813,1013-1105,1335-1611/Region: duplication
F;56,251,1321,1504/Binding site: phosphate (Ser) (covalent) (by cAMP-dependent kinase) #
F;214,288,291,297,303,309,315,327,356,502,696,954,1184,1198,1563,1702/Binding site: carb
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A; Molecule type: mRNA
A; Residues: 1-1840 cTRI>
A; Cross-references: UNIPROT: P15390; GB: M26643; NID: 9205651; PIDN: AAA41682.1;
C; Comment: Action potentials propagated by skeletal muscle sodium channels are
C; Comment: This heavily glycosylated protein contains four homologous domaine
C; Comment: This protein is distinct from but related to sodium channel protein
C; Superfamily: sodium channel protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Trimmer, J.S.; Cooperman, S.S.; Tomiko, S.A.; Zhou, J.; Crean, S.M.; Boyle, M.B.; Kall Neuron 3, 33-49, 1989
A;Title: Primary structure and functional expression of a mammalian skeletal muscle sod: A;Reference number: JN0007; MUID:90148778; PMID:2559760
A;Accession: JN0007
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;Species: Rattus norvegicus (Norway rat)
;Date: 30-Sep-1990 #sequence_revision 30-Sep-1990 #text_change
;Accession: JN0007
                          Similarity
16; Conserv
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                    Conservative
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     57.1%; Score 16; DB 100.0%; Pred. No. 1.7
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100.0%; Fr
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100.0%; Pred. No.
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                                      1.2e-07
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domains, each of w
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A; Status: nuccarant A; Molecule type: mRNA
A; Residues: 1-1957 < AKO>
A; Residues: 1-1957 < AKO>
A; Residues: 1-1957 < AKO>
A; Cross-references: UNIPROT:Q63554; GB:X92184; NID:g1209466; PIDN:CAA63095.1; PID:g12094
A; Experimental source: dorsal root ganglia
C; Superfamily: sodium channel protein
C; Keywords: sodium channel; transmembrane protein; voltage-gated ion channel
F; 132-148/Domain: transmembrane #status predicted < TM2>
F; 158-174/Domain: transmembrane #status predicted < TM3>
F; 249-265/Domain: transmembrane #status predicted < TM5>
F; 249-265/Domain: transmembrane #status predicted < TM5>
F; 666-682/Domain: transmembrane #status predicted < TM7>
F; 702-718/Domain: transmembrane #status predi
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A;Residues: 611-662 <SCH>
A;Cross-references: G8:S97388; NID:g248225; PIDN:AAB21984.1; PID:g248226
A;Cross-references: skeletal muscle
A;Experimental source: skeletal muscle
A;Note: sequence inconsistent with the nucleotide translation
A;Note: sequence extracted from NCBI backbone (NCBIN:97388, NCBIP:97391)
C;Superfamily: sodium channel protein
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C;Date: 03-Mar-1993 #sequence_revision 03-Mar-1993 #text_change 09-Jul-2004
C;Accession: A60054; B44824
R;Joho, R.H.; Moorman, J.R.; VanDongen, A.M.J.; Kirsch, G.E.; Silberberg, H.; Schuster, Brain Res. Mol. Brain Res. 7, 105-113, 1990
A;Title: Toxin and kinetic profile of rat brain type III sodium channels expressed in X:A;Reference number: A60054; MUID:90251117; PMID:2160038
A;Accession: A60054
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R;Akopian, A.N.; Sivilotti, L.; Wood, J.N.
Nature 379, 257-262, 1996
A;Tille: A tetrodotoxin-resistant voltage-gated sodium channel expressed by sensory neur A;Reference number: S68453; MUID:96138382; PMID:8538791
A;Accession: S68453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sodium channel protein SNS - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
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A;Residues: 1-1983 </DH>
A;Residues: 1-1983 </JOH>
A;Residues: 1-1983 </JOH>
A;Cross-references: UNIPROT:064243
A;Cross-references: UNIPROT:064243
T, Seurosci. 12, 1370-1381, 1992
A;Molecular type: 1992
A;Title: Alternatively spliced sodium channel transcripts in brain
A;Reference number: A44824; MUID:92211397; PMID:1313493
A;Accession: B44824
A;Accession: B44824
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Best Local Similarity
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sodium channel protein hHI, cardiac - human

// Alternate names: tetrodocoxin-insensitive, voltage-dependent sodium channel,
C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 09-Jul-2004
C;Accession: A38195
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A;Residues: 1-1976 <RES>
A;Cross-references: UNIPROT:Q63541; GB:L39018; NID:g829033; PIDN:AAC42059.1; PID:g829034
C;Genetics:
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C;Date: 26-Jul-1996 #sequence_revision 26-Jul-1996 #text_change 09-Jul-2004
C;Accession: I56555
R;Schaller, K.L.; Krzemien, D.M.; Yarowsky, P.J.; Krueger, B.K.; Caldwell, J. Neurosci. 15, 3231-3242, 1995
A;Title: A novel, abundant sodium channel expressed in neurons and glia.
A;Reference number: I56555; MUID:95271284; PMID:7751906
A;Accession: I56555
                                                                                                                                                                                                                                                                                                                                                                                           A;Title: Primary structure and functional expression of A;Reference number: A38195; MUID:92115699; PMID:1309946 A;Accession: A38195
                                                                                                                                       C;Superfamily: sodium channel protein
C;Keywords: cardiac muscle; duplication; glycoprotein; heart; ion
                                                                                                                                                                                                                                                A;Molecule type: mRNA
A;Residues: 1-2016 <GEL>
A;Cross-references: UNIPROT:Q14524; GB:M77235; NID:g184038; PIDN:AAA58644.1; PID:g184039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Gellens, M.E.; George Jr., A.L.; Chen, L.Q.; Chahine, M.; Horn, R.; Barchi, R.L.; Kal. Proc. Natl. Acad. Sci. U.S.A. 89, 554-558, 1992
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C;Keywords: duplication
                                                                                                                                                                            A;Experimental source: heart C;Superfamily: sodium channel protein
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100.0%; Pred. No. 0.0086;
ative 0; Mismatches 0
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100.0%; Pr
0;
                                     100.0%;
39.3%; Score 11; DB 2;
100.0%; Pred. No. 0.0087;
cive 0; Mismatches (
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Pred. No.
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   0; Indels
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                                                                       Length 2016
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18 NLILAVVAMAY 28

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chlorophyll a/b-binding protein type I precursor - tomato
C;Species: Lycopersicon esculentum (tomato)
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text 
                                                                                        RESULT 19
S16294
                                                                                                                                                                                                                                                                                                                                                                                       A;Residues: 1-1784 <ROS>
A;Cross-references: UNIPROT:Q25377; EMBL:L19979; NID:g349118; PID:g349119; A;Experimental source: stellate ganglia C;Superfamily: sodium channel protein C;Keywords: ion transcript
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sodium channel protein - California market squid
c;Species: Loligo opalescens (California market squid)
C;Date: 11-Jan-2000 #sequence_revision 11-Jan-2000 #text_change 09-Jul-2004
C;Accession: T43167
R;Rosenthal, J.J.; Gilly, W.F.
Proc. Natl. Acad. Sci. U.S.A. 90, 10026-10030, 1993
A;Title: Amino acid sequence of a putative sodium channel expressed in the giant axon
A;Reference number: Z22324; MUID:94052096; PMID:8234251
A;Accession: T43167
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N;Alternate names: sodium channel protein (SkM2) alpha chain
C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Mar-1990 #sequence revision 30-Mar-1990 #text_change 09-Jul-2004
C;Accession: A33996; JQ0412
R;Rogart R.B.; Cribbs, L.L.; Muglia, L.K.; Kephart, D.D.; Kaiser, M.W.
Proc. Natl. Acad. Sci. U.S.A. 86, 8170-8174, 1989
A;Title: Molecular cloning of a putative tetrodotoxin-resistant rat heart N;
A;Reference number: A33996; MUID:90046780; PMID:2554302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Experimental source: muscle C; Superfamily: sodium channel protein
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A;Accession: JQ0412
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A,Residues: 1-479,481-1712,'T',1714-1963,'R',1965-2019 <KAL>
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A;Molecule type: mRNA
A;Rosidues: 1-2019 <ROGS
A;Cross-references: UNIPROT:P15389; GB:M27902; NID:g206857; PIDN:AAA42114.1;
A;Cross-references: UNIPROT:P15389; GB:M27902; NID:g206857; PIDN:AAA42114.1;
R;Kallen, R.G.; Sheng, Z.H.; Yang, J.; Chen, L.; Rogart, R.B.; Barchi, R.L.
Neuron 4, 233-242, 1990
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#sequence_revision 19-Mar-1997 #text_change
                                                                                                                                                                                                                                                                             35.7%; Score 10; DB
100.0%; Pred. No. 0.0
tive 0; Mismatches
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Pred. No.
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A;Cross-references: UNIPROT:088457; EMBL:AF059030; NID:g3372614; PID:g3372615; A;Experimental source: strain Sprague-Dawley; dorsal root ganglia A;Note: preferentially expressed in sensory neurons within dorsal root ganglia C;Superfamily: sodium channel protein
                                                                                                                                                                                                                                     R;Dib-Hajj, S.D.; Tyrrell, L.; Black, J.A.; Waxman, S.G. Proc. Natl. Acad. Sci. U.S.A. 95, 8963-8968, 1998
A;Title: NaN, a novel voltage-gated Na channel, is expre
                                                                                                                                               A; Molecule type: mRNA
A; Residues: 1-1765 < DIB>
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                                                                                                                                                                                                      A;Reference number: Z22149; MUID:98338024; PMID:9671787
                                                                                                                                                                                                                                                                                                     sodium channel alpha chain - rat
C;Species: Rattus morvegicus (Norway rat)
C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 09-Jul-2004
C;Accession: T42388
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T42388
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A;Introns: 70/1; 98/2; 115/2; 155/3; 200/3
C:Superfamily: chlorophyll a/b-binding protein
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A; Residues: 1-286 < SOR >
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          chlorophyll a/b-binding protein CP29 precursor - barley C;Species: Hordeum vulgare (barley) C;Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 09-Jul-2004
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C; Accession: S21386
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C;Superfamily: chlorophyll a/b-binding protein
C;Keywords: chloroplast; thylakoid
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R;Pichersky, E.; Subramaniam, R.; White, M.J.; Reid, J.; Aebersold, R.; Green, Mol. Gen. Genet. 227, 277-284, 1991
A;Title: (Cilorophyll a/b binding (CAB) polypeptides of CP29, the internal chlor or a second CP29 polypeptide.
A;Reference number: S16294; MUID:91287707; PMID:2062308
A;Accession: S16294
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A;Molecule type: DNA
A;Residues: 1-286 <GRE>
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Best Local Similarity
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ABC transporter required for expression of cytochrome bd (ATP-) cydD - Bacillus (;Species: Bacillus subtilis C;Decies: Bacillus subtilis C;Date: 05-Deci-1997 #sequence_revision 05-Dec-1997 #text_change 16-Aug-2004 C;Accession: D69611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Hallsworth, K.
submitted to the EMBL Data Library, April 1996
A;Description: The sequence of C. elegans cosmid C42D8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein C42D8.1 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-103 <KNI>
A;Residues: 1-103 <KNI>
A;Residues: 1-103 <KNI
A;Residues: 1-103 <KNI
A;Residues: 1-103 <KNI
A;Residues: 1-103 <KNI
A;Note: sequence inconsistent with nucleotide translation
A;Note: sequence extracted from NCBI backbone (NCBIN:146081, NCBIP:146080)
C;Superfamily: sodium channel protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Knipple, D.C.; Doyle, K.E.; Marsella-Herrick, P.A.; Soderlund, D.M. Proc. Natl. Acad. Sci. U.S.A. 91, 2483-2487, 1994
A;Title: Tight genetic linkage between the kdr insecticide resistance trait and A;Reference number: A53461; MUID:94195766; PMID:8146143
A;Contents: NAIDM, insecticide-susceptible
A;Accession: A53461
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C;Date: 06-Oct-1994 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004
C;Accession: A53461
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C;Species: Musca domestica (house fly)
                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: UNIPROT:Q18582; EMBL:U56966; NID:g1293844; PID:g1293849; PIDN:AAA98
A;Experimental source: strain Bristol N2; clone C42D8
                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-245 < HAL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Reference number: Z18405
A; Accession: T15794
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                                                                                D69611
                                                                                                     RESULT
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                                                                                                                                                                                                                                                                                                                                                              Gene: CESP:C42D8.1
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100.0%;
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IFLGSFYL 16

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A.; Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington, J.; Fabret, C.; Perrari, E. Nature 390, 249-255, 1997

A;Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Galle; iech, J.; Harwood, C.R.; Henaut, A.; Hibbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.F. Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardinois A;Authors: Lauber, J.; Lazarevic, V.; Lee, K., Levine, A.; Liu, H.; Masuda, S.; Mauee, Y., M.; Ogawa, K.; Ogiwara, A.; Oudega, B.; Park, S.H.; Farro, V.; Pohl, T.M.; Portetell, Y. Rieger, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sato, T.; Scanlon, A;Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Scrolakeuchi, M.; Tamakoshi, A.; Tanaka, T.; Terpstra, P.; Tognoni, A.; Tosato, V.; Uchiyama, T.; Winters, P.; Wipat, A.; Yamamoto, H.; Yamane, K.; Yasumoto, K.; Yata, K.; Yoshida, I., Juthors: Yoshikawa, H.F.; Zumsteln, E.; Yoshikawa, H.; Danchin, A.
A;Title: The complete genome sequence of the Grameros hot shown is a contract to the shown and the state of the Grameros and shown is a contract shown in translation not shown in the shown is a contract shown.
                                                                                                                             A;Gene: FlyBase:Dvir/para
A;Gene: FlyBase:Dvir/para
A;Cross-references: FlyBase:FBgn0015214
C;Superfamily: sodium channel protein
C;Superfamily: sodium channel protein
C;Keywords: alternative splicing; duplication; transmembrane protein
F;306-329/Region: alternatively spliced segment i (exon 4) #status experimental
F;330-350/Region: alternatively spliced exon a #status experimental
F;538-545/Region: alternatively spliced segment b (exon 9) #status experimental
F;8874-886/Region: alternatively spliced segment e (exon 12) #status experimental
F;887-896/Region: alternatively spliced segment f (exon 13) #status experimental
F;958-982/Region: alternatively spliced segment h (exon 14) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sodium channel alpha chain, exon c-containing splice form - fruit fly (Drosophila viril: C;Species: Drosophila viril: C;Species: Drosophila viril: C;Species: Drosophila viril: C;Species: Drosophila viril: C;Accession: S60051
R;Thackeray, S60051
R;Thackeray, J.R.; Ganetzky, B.
Genetics 141, 203-214, 1995
A;Title: Conserved alternative splicing patterns and splicing signals in the Drosophila A;Reference number: S60051; MUID:96042905; PMID:8536968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: nucleic acid sequence not A;Molecule type: nucleic acid A;Residues: 1-1034 <THA>
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S60051
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C; Genetics:
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Search completed: January 27, 2005, 17:52:42 Job time : 20 secs

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Result
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Maximum DB seq length: 200000000
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    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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30; GC:0005261; F:cation channel activity; IEA.

30; GC:0006812; P:cation transport; IEA.

InterPro; IPR001682; Ca/Na_pore.

InterPro; IPR001682; Ca/Na_pore.

InterPro; IPR001682; Ca/Na_pore.

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HSSP; P08104; 1QG9.
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01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
Similar to sodium channel, voltage-gated, type II, alpha 2 polypeptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YMIFFVLVIFLGSFYLINLILAVVAMAY 28
                                                   510 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      506 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata;
Primates;
                                                 57660 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57147 MW; 39C32369D2A96D39 CRC64;
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Primates;
    100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24, Created,
24, Last sequence update)
. 25, Last annotation update)
. 25, Last annotation type II,
                                                                                                                                                                                                                                                                                                              EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
    Score
                                                                               Transmembrane; Transport
                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Ve
Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 28; DB 2;
Pred. No. 2.5e-18;
                                            CFB153E259C32369 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
    28;
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    DB
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Length 510;
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RESULT
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                                                                                                                                                                                                    Matches
                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                               GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0001518; C:voltage-gated sodium channel con
GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:0005262; F:voltage-gated sodium channel act
GO; GO:0005248; F:voltage-gated sodium channel act
GO; GO:0006812; P:cation transport; IEA.
GO; GO:0006814; P:codium ion transport; IEA.
InterPro; IPR001582; Cal/Na pore.
InterPro; IPR001582; Cal/Na pore.
InterPro; IPR001582; I, Ion trans.
InterPro; IPR00048; IQ region.
InterPro; IPR00048; IQ region.
InterPro; IPR0015820; M+Channel nlg.
InterPro; IPR001696; Na channel.
InterPro; IPR001097; Ribonuclease_P.
Pfam. PR003201; Ton trans.
HUMAN

CIN2 HUMAN

CIN2 HUMAN

STANDARD;

PRT;

ZUUD AAA.

Q99250;

Q14472;

Q9BZC9;

Q9BZD0;

O1-JUN-1994 (Rel. 29, Created)

28-FEB-2003 (Rel. 41, Last sequence update)

O5-JUL-2004 (Rel. 44, Last annotation update)

Annual protein type II alpha subunit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local
Matches :
                                                                                                                                                                                                                                                                                                                 Pfam; PF00520; Ion trans; 4.
Pfam; PF00612; IQ; 1.
Pfam; PF00612; Na trans assoc;
PRINTS; PR00170; NACHANNEL
PRINTS; PR01664; NACHANNEL1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q8IUJ6;
Q8IUJ6;
01-MAR-2003
                                                                                                                                                                                                                                                                                            SMART; SM00015; IC
PROSITE; PS00648;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouchida M., Ohmori I.;
Submitted (DEC-2002) to the EMBL/GenBank/DDBJ
-!- SUBCELLULAR LOCATION: Integral membrane pr
-!- SIMILARITY: Belongs to the sodium channel
EMBL; AB098335; BAC45228.1; --
HSSP; P04775; LBYY.
                                                                                                                                                                                                                                                                               on transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. TISSUE=Normal brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Name=SCN1A;
Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Voltage-gated sodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-MAR-2003
01-MAR-2004
                                                                                                                                                399
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                                                                                                                                                                                                 28;
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                                                                                                                                                                                                                                                 Voltage-gated channel.
1981 AA; 226701 Voltage.
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                                                                                                                                                                                            100.0%; Score 28; DB 2; ]
.larity 100.0%; Pred. No. 7.1e-18;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel.)
(TrEMBLrel.)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                     IQ; 1.
8; RIBONUCLEASE P; UNKNOWN 1.
*~~** channel; Sodium channel; Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chordata; Craniata; Vertebrata; Euteleostomi; Primates; Catarrhini; Hominidae; Homo.
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Last sequence update)
Last annotation updat
l alpha 1 subunit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 2.0; Mismatches
                                                                                                                                                                                                                                                 B1D6946D6491B7AD
                                                                                                                                             426
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hes 0;
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                                                                                                                                                                                                                      Length 1981;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complex;
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This SWISS-rav. Detween the Swiss Institute the European Bioinformatics Institute. The European Broinformatics Institutions as long use by non-profit institutions as long
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SEQUENCE OF
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subunit)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=91110524; PubMed=1846440;
Han J., Lu C.-M., Brown G.B., Rado T.A.;
"Direct amplification of a single dissected chromosomal
polymerase chain reaction: a human brain sodium channel
polymerase chain reaction: a human brain sodium channel
chromosome 2922-923.";
                                                                                                                                                                                                                                                                                                                                                                                                -
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Lu C.-M., Han J., Rado T.A., Brow
"Differential expression of two s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 1-89 FROM N.A.

LU C.-M., Eichelberger J.S., Beckman M.L., Schade S.D., I

LU C.-M., Eichelberger J.S., Beckman M.L., Schade S.D., I

"Isolation of the 5'-flanking region for human brain sod:
subtype II alpha-Subunit (SCN2A).";
Submitted (APR-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (ISOFORMS 1 AND 2).

MEDLINE=21142400; PubMed=11245985; DOI=10.1016/S0378-1119(00)00594-1;

KASSAI N., FUKUSHIMS K., Ueki Y., Prasad S., NOBAKOWSKI J.,

Sugata K.-I., Sugata A., Nishizaki K., Meyer N.C., Smith R.J.H.;

"Genomic structures of SCN2A and SCN3A - candidate genes for deafness
at the DFNA16 locus.";

Gene 264.113-1006...;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 1702-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Evans G.A., Montal M.; "Primary structure, chromosomal localization, and expression of a voltage-gated sodium channel from Proc. Natl. Acad. Sci. U.S.A. 89:8220-8224(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa;
Mammalia; Butheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Name=SCN2A; Synonyms=SCN2A2,
Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gene
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
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                                                                                                                                                                                                                                                                                        Event=Alternative splicing; Named isoforms=2;

Rame=1; Synonyms=Adult, 6A;

IsoId=099250-1; Sequence=Displayed;

Name=2; Synonyms=Neonatal, 6N;

IsoId=099250-2; Sequence=VSP_001032;

DoMain: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1,S2,S3,S5,S6) and one positively charged segment (S4). Segments S4 are probably the voltage-sensors and ar characterized by a series of positively charged amino acids at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C. Natl. Acad. Sci. U.S.A. 88:335-339(1991).

FUNCTION: Mediates the voltage-dependent sodium ion permeability of excitable membranes. Assuming opened or closed conformations in response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) ions may pass in accordance with their electrochemical gradient. SUBUNIT: The sodium channel consists of a large polypeptide and 2-3 smaller ones. This sequence represents a large polypeptide. SUBCELLULAR LOCATION: Integral membrane protein.

ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                      every third position.
SIMILARITY: Belongs to the sodium channel family.
SIMILARITY: Contains 1 IQ domain.
                                                                   SWISS-PROT entry is copyright. It is produced through a collaboration sen the Swiss institute of Bioinformatics and the EMBL outstation - surveyean Bioinformatics institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alpha subunit Nav1.2) (Sodium ) (HBSC II).
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Primates; Catarrhini;
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i; Hominidae;
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                                                                                                                                                                          GO; GO:0005887; C:integral to plasma membrane; TA;
GO; GO:0005248; F:voltage-gated sodium channel ac;
GO; GO:0006814; P:sodium ion transport; TAS.
InterPro; IPR001682; Ca/Na_pore.
InterPro; IPR005821; IOn_trans.
InterPro; IPR005821; IOn_trans.
InterPro; IPR0005821; IOn_trans.
InterPro; IPR0005820; M+Channel_nlg.
InterPro; IPR005820; M+Channel.
Pfam; PF00512; Na_trans_assoc.
Pfam; PF00512; Na_trans_assoc; 1.
Pfam; PF00512; Na_trans_assoc; 1.
PRONITE; PR00170; NaCHANNEL.
PRONITE; PR00170; NaCHANNEL.
                                                            Alternative splicing; Glycoprotein; Ion transport; Ionic Multigene family; Repeat; Sodium channel; Transmamhrer Voltage-gated channel.
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AP327238; AAG53413.1;
AP327238; AAG53413.1;
AP327240; AAG53413.1;
AP327241; AAG53413.1;
AP327242; AAG53413.1;
AP327244; AAG53413.1;
AP327244; AAG53413.1;
AP327244; AAG53413.1;
AP327245; AAG53413.1;
AP327226; AAG53412.1;
AP327227; AAG53412.1;
AP327229; AAG53412.1;
AP327231; AAG53412.1;
AP327232; AAG53412.1;
AP327233; AAG53412.1;
AP327233; AAG53412.1;
AP327234; AAG53412.1;
AP327235; AAG53412.1;
AP327236; AAG53412.1;
AP327237; AAG53412.1;
AP327238; AAG53412.1;
AP327239; AAG53412.1;
AP327739; AAG53412.1;
AAG53412.1;
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RESULT 5
CIN2 RAT
ID CIN2 RAT

                  Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
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             EMBL; X03639; CAA27287.1; -.
PDB; 1BYY; NNR; A=1474-1526.
InterPro; IPR00162; CA/Na pore.
InterPro; IPR002111; Cat_channel TrpL.
InterPro; IPR002521; Ion_trans.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005820; M-Channel nlg.
InterPro; IPR001696; Na_channel nlg.
InterPro; IPR001696; Na_channel.
InterPro; IPR011696; Na_trans_assoc.
Pfam; PP00520; Ion_trans; 4.
Pfam; PP00520; Ion_trans; 4.
Pfam; PP00512; Na_trans_assoc; 1.
PRINTS; PR00170; NACHANNEL.
PROSITE; PS50096; IO; 1.
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-ISUBNUT: The sodium channel consists of a large polypeptide and 2-smaller ones. This sequence represents a large polypeptide.

-ISUBCELLULAR LOCATION: Integral membrane protein.
-IDOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1, S2, S3, S5, S6) and one positively charged characterized by a series of positively charged amino acids at every third position.

-ISUMILARITY: Contains to the sodium channel family.
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Multigene family; Repeat; Sodium
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SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE=86146901; PubMed=3754035;
Noda M., Ikeda T., Kayano T., Suzuki H., Takeshima H., K
Takahashi H., Numa S.;
Takahashi H., Numa S.;
"Existence of distinct sodium channel messenger RNAs in Nature 320:188-192(1986).

-I- FUNCTION: Mediates the voltage-dependent sodium ion
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m channel; Transmembrane;
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01-JUN-1994 (Rel. 29, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
Sodium channel protein type I alpha subunit (Voltage-gated channel alpha subunit Navl.1) (Sodium channel protein, brai
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EBCAY9 A., MacDonald B.T., Meisler M.
An-Gourfikkel I., Brice A., LeGuern E
Buresi C., Malafosse A.;
                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Name=SCN1A; Synonyms=SCN1, NAC1; Homo sapiens (Human).
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Neurology 57:2265-2272(2001).
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Abou-Khalil B., Ge Q., Desai R., Ryther R.,
Haines J.L., Sutcliffe J.S., George A.L. Jr.
"Partial and generalized epilepsy with febri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "De novo mutations in the sodium-chann myoclonic epilepsy of infancy."; Am. J. Hum. Genet. 68:1327-1332(2001).
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Escayg A., Heils A., MacDonald B.T., Haug K., Sander T., Meisler M.H.;
"A novel SCNIA mutation associated with generalized epilepsy with
febrile seizures plus -- and prevalence of variants in patients with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Neuronal sodium-channel alphal-subunit epilepsy with febrile seizures plus."; Am. J. Hum. Genet. 68:859-865(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Desai R.R., Lerman-Sagie T., Lev D., Mazarib A., Brand N., Ben-Zeev B., Goikhman I., Singh R., Kremmidiotis G., Gardner A., Sutherland G.R., George A.L. Jr., Mulley J.C., Berkovic S.F., "Neuronal sodium-channel alphal-subunit mutations in generalized
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Malo M.S., Blanchard B.J., Andresen J.M., Srivastava K.,
Li X., Jabs E.W., Korenberg J.R., Ingram V.M.;
"Localization of a putative human brain sodium channel ge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (OCT-2002) [5]
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wallace R.H., Scheffer I.E., Barnett
Desai R.R., Lerman-Sagie T., Lev D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=21152274;
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[6]
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                                                                                                                                                                                                                                                                                                                    of excitable membranes. Assuming opened or closed conformatic response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) may pass in accordance with their electrochemical gradient. SUBUNIT: The sodium channel consists of a large polypeptide a smaller ones. This sequence represents a large polypeptide subscripting in the contraction of the contracti
IsoId=P35498-2; Sequence=VSP 001031; IsoId=P35498-2; Sequence=VSP 001031; Note=No experimental confirmation available; Note=No experimental confirmation available; NoMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1,S2,S3,S5,S6) and one positively charged segment (S4). Segments S4 are probably the voltage-sensors and are characterized by a series of positively charged amino acids at every third position.

DISEASE: Defects in SCNIA are the cause of generalized epilepsy with febrile seizures plus type 2 (GEFS+2) [MIM:604233]. This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION: Mediates the voltage-dependent sodium
                                                                                                                                                                                                                             Name=2
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seizures

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GO; GO:0016021; C:integral to membrane; NAS.
GO; GO:0005248; F:voltage-gated sodium channel act
GO; GO:0005814; P:sodium ion transport; NAS.
InterPro; IPR001682; Ca/Na pore.
InterPro; IPR002111; Cat Channel TrpL.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005820; M+Channel nlg.
InterPro; IPR0001696; Na_channel.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
InterPro; IPR010526; Ma_trans_assoc.
Pfam: pF00520; Ion trans_4.
                                                                                                                                                                                                                                                                                                                                                           EMBL; AF225985; AAK00217.1; -.
EMBL; AY043484; AAK95360.1; -.
EMBL; AB093549; BAC21100.1; -.
EMBL; AB093549; BAC21102.1; -.
EMBL; S71446; AAB31605.1; -.
EMBL; X65362; CAA46439.1; -.
EMBL; M91803; -; NOT ANNOTATED_CDS.
PIR; 152964; I52964.
PIR; S29184; S29184.
HSSP; P04775; IBYY.
Genew; HGNC:10585; SCN1A.
MIM; 604233; -.
MIM; 607208; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      between the Swiss Institute of Bioinformatics and the EMBL outstation -
the European Bioinformatics Institute. There are no restrictions on its
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or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SWISS-PROT entry is copyright. It is produced through a collabeen the Swiss Institute of Bioinformatics and the EMBL outst European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in
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RESULT 7

CIN1_RAT

CIN1_RAT

D CIN1_RAT

STANDARD; PRT; 2009 AA.

AC P04774;

DT 13-AUG-1987 (Rel. 05, Created)

DT 13-AUG-1987 (Rel. 05, Last sequence update)

DT 05-JUL-2004 (Rel. 44, Last annotation update)

DE Sodium Channel protein type I alpha subunit (Volt
 RL J. Recept. Res. 7:467-497(1987).

CC -!- FUNCTION: Mediates the voltage-dependent sodium ion permeability CC of excitable membranes. Assuming opened or closed conformations in response to the voltage difference across the membrane, the cC response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) ions CC may pass in accordance with their electrochemical gradient.

CC subcuri: The sodium channel consists of a large polypeptide and 2-cc subcuri. The sequence represents a large polypeptide.

CC -!- SUBUNIT: The sodium channel family.

CC -!- SUBCELLULAR LOCATION: Integral membrane protein.

CC -!- DOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments ($1,$2,$3,$5,$6) and one positively charged characterized by a series of positively charged amino acids at cevery third position.

CC -!- SIMILARITY: Belongs to the sodium channel family.

CC -:- SIMILARITY: Contains 1 10 domain.
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Matches 28
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no we modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
MEDIJINE=86146901; PubMed=3754035;
Noda M., Ikeda T., Kayano T., Suz'
Takahashi H., Numa S.;
"Existence of distinct sodium cha:
Nature 320:188-192(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                   Nature
[2]
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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Proc. Natl. Acad. Sci. U.S.A. 94:12670-12675(1997).

EMBL; AJ001489; CAA04784.1; -.

EMBL; AJ0016021; C:integral to membrane; IEA.
GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:000681; F:cation transport; IEA.
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Friedel R.H., Schnuerch H., Stubbusch J., Barde Y.A.;
"Identification of genes differentially expressed by
factor- and neurotrophin-3-dependent sensory neurons.
Proc. Natl. Acad. Sci. U.S.A. 94:12670-12675 (1997).
EMBL; AJ001190; CAA04785.1; -
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EMBL; GO:0016021; C:integral to membrane; IEA.
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; Galliformes; Phasianidae; Phasiani
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NON_TER 1
NON_TER 247
                                                                                                                                                                                                                                                                                                                            InterPro;
Pfam; PFO
                                                                                                                                                                                                                                                                                                                                                                    and to skeletal muscle membranes of puffer fish Fugu pardalis, primary structure of a voltage-gated Na+ channel alpha-subunit from skeletal muscle of F. pardalis.", Biochem. Biophys. Res. Commun. 267:403-412(2000). EMBL; AB032022; BAA90308.1; GO:0016021; C:integral to membrane; IEA. GO: GO:0005261; F:cation channel activity; IEA. GO:0006812; F:cation transport; IEA. InterPro; IPR001602; CA/Na.pore.
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01-OCT-2000
                                                                                                                                                                                                                                                                     SEQUENCE
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01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
Skeletal muscle voltage-gated sodium channel (FMNa2) (Fragment).
Takifugu pardalis (Panther puffer).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii, Meopterygii; Teleostei; Buteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Tetradontoidea; Takifugu.

Tetradontoidea; Tetraodontidae; Takifugu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=20090650; PubMed=10623632; Yotsu-Yamashita M., Nishimori K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
TISSUE=Skeletal muscle;
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                                                                                                                                         223
                                                                                                                                                                                                                                                                                                 PF00520; Ion trans; 1. ransmembrane; Transport
                                                                                                                                                 8 VIFLGSFYLINLILAVVAMAY 28
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IPR005820; M+channel_nlg.
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247
      (Rel. 01, Created)
(Rel. 01, Last sequence update)
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Pred. No.
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RL J. Recept. Res. 7:467-497(1987).

CC -!- FUNCTION: Mediates the voltage-dependent sodium ion permeability CC -!- FUNCTION: Mediates the voltage-dependent sodium ion permeability CC of excitable membranes. Assuming opened or closed conformations in CC response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) ions CC may pass in accordance with their electrochemical gradient.

CC may pass in accordance with their electrochemical gradient.

CC -!- SUBCELLULAR LOCATION: Integral membrane protein.

CC -!- SUBCELLULAR ENCATION: Integral membrane protein.

CC -!- DOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1, S2, S3, S5, S6) and one positively charged cc segment (S4). Segments S4 are probably the voltage-sensors and are characterized by a series of positively charged amino acids at cevery third position.

CC every third position.

CC inactivation gates are located near the cytoplasmic surface of the membrane. It is hypothesized that residues 802-806, 847-857, 894-

CC glo, and 942-955 might, in conjunction with the positively charged and considered with the positively charged sensor involved with the
InterPro; IPR001682; Ca/Na pore.

InterPro; IPR00211; Cat_channel_TrpL.

InterPro; IPR005821; Ion_trans.

InterPro; IPR005821; Ion_trans.

InterPro; IPR00188; IQ region.

InterPro; IPR00188; Na_channel nlg.

InterPro; IPR001826; Na_trans_assoc.

Pfam; PF00512; IOn_trans; 4.

Pfam; PF06512; Na trans assoc; 1.

Pfam; PF06512; Na trans assoc; 1.

PRINTS; PR00170; NaCHANNEL.

PROSITS; PS09096; IQ; PALSE, NGC.

Glycoprotein; Ion transport; Ionic channel; Repeat; Sod

Transmembrane; Voltage-gated channel.

REPEAT 555 807 II.

REPEAT 555 807 IV.

REPEAT 1311 1587 IV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way endified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; X01119; CAA25587.1; -.
EMBL; M22252; AAA79960.1; -.
PIR; A03178; CHEE.
HSSP; P04775; 1BYY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-85061498; PubMed-6209577;
Noda M., Shimizu S., Tanabe T., Takai T., Kayano T., Ikeda T., Takahashi H., Nakayama H., Kanaoka Y., Minamino N., Kangawa K., Matsuo H., Raftery M.A., Hirose T., Inayama S., Hayashida H., Miyata T., Numa S., Miyata T., Numa S., Takahashi T., Inayama S., Hayashida H., "Primary structure of Electrophorus electricus sodium channel deduced from CDNA sequence.";
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Sodium channel protein (Na(+) channel).
Electrophorus electricus (Electric ed).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Gymnotiformes;
Electrophoridae; Electrophorus.
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SIMILARITY: Belongs to the sodium channel family.
SIMILARITY: Contains 1 IQ domain.
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CARBOHYD
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TISSUE-Skeletal muscle;
MEDLINE-20090650; PubMed=10623632;
Yotsu-Yamashita M., Nishimori K.,
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"Binding properties of 3H-PDTX-3 and 3H-saxitoxin to brain memb and to skeletal muscle membranes of puffer fish rugu pardalis, primary structure of a voltage-gated Na+ channel alpha-subunit from skeletal muscle of F. pardalis."; Biochem. Biophys. Res. Commun. 267.403-412(2000).

-i- SUBCELIJULAR LOCATION: Integral membrane protein (By similar -i- SIMILARITY: Belongs to the sodium channel family.
                                                                                                                                                                                                                                   Voltage-gated sodium channel.

Takifugu pardalis (Panther puffer).

Takifugu pardalis (Panther puffer).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;

Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;

Tetradontoidea; Tetraodontidae; Takifugu.
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01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
                                                                                                                               Yasumoto
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S3 of repeat I.
S4 of repeat I.
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S3 of repeat II.
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S5 of repeat III.
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S9 of repeat IV.
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S9 of repeat IV.
Non-homologous region o
S6 of repeat IV.
Non-homologous region O
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                                                                                                                                                 Isemura
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RESULT
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Best Local S
Matches 21
                               human neuroendocrine cells.";
EMBO J. 14:1084-1090(1995)
-!- SUBCELLULAR LOCATION: Integral membra:
-!- SIMILARITY: Belongs to the sodium chanels, X82835; CAA58042.1; --
PIR; SS4771; SS4771
HSSP; P04775; 1BYY.
Genew; HGNC:10597; SCN9A.
GG; GG:0005248; F:voltage-gated sodium chanec in the sport; PR001681; P:sodium ion transport; T.
GG; GG:0005211; Cat channel TrpL.
InterPro; IPR001682; Ca/Na pore.
InterPro; IPR001682; Ton_trans.
InterPro; IPR000821; Ion_trans.
InterPro; IPR000882]; Na_trans_assoc.
Pfam: PF00520; IOn_trans_assoc.
InterPro; IPR001696; Na_trans_assoc.
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InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR0005821; IOn_trans.
InterPro; IPR00048; IQ_region.
InterPro; IPR001696; Na_channel nlg.
InterPro; IPR001696; Na_trans_assoc.
Pfam; PP00512; Na_trans_assoc.
Pfam; PP00512; Na_trans_assoc; 1.
Pfam; PP06512; Na_trans_assoc; 1.
PRINTS; PR00170; NaCHANNEL.
PROSTITE; PS50096; IQ; 1.
Ion transport; Ionic channel; Sodium chantransport; Voltage-gated channel.
SEQUENCE 1880 AA; 212084 MW; 406483C
                                                                                                                                                                                                                                                                                                                                                                                                                Q15858;
Q15858;
Q1-NOV-1996
Q1-NOV-1996
Q1-MAR-2004
             Pfam;
Pfam;
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HSSP; P04775; IBYY.
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0001518; C:voltage-gated sodium channel complex; IEA.
GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:0005248; F:voltage-gated sodium channel activity; IEA.
GO; GO:0006812; P:cation transport; IEA.
GO; GO:0006812; P:sodium transport; IEA.
                                                                                                                                                                                                                                                   MEDLINE=95237189; PubMed=7720699;
Klugbauer N., Lacinova L., Flockerzi V.,
"Structure and functional expression of a
tetrodotoxin-sensitive voltage-activated
                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (Human)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                          Sodium channel alpha Name=hNE-Na;
                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9606;
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  PF00520;
PF00612;
PF06512;
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(TrEMBLrel.
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              Ion_trans;
IQ; 1.
_trans_assoc;
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Primates;
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annotation update)
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                                                                                                                           channel activity; TAS
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d sodium channel
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DT Q1-NC
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InterPro; IPRO02111; Cat channel TrpL.
InterPro; IPRO05821; Ion trans.
InterPro; IPRO05821; Ion trans.
InterPro; IPR005820; M+channel nlg.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_trans_a8860c.
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Best Local S
Matches 21
               008562
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Pfam; PF00612; IQ; 1.

Pfam; PF006512; Na trans_assoc; 1.

PRINTS; PR00170; NACHANNEL.

SMART; SM00015; IQ; 1.

Ion transport; Ionic channel; Sodium channel; Transmembrane;
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GO; GO:0001518; C:voltage-gated sodium channel complex; IEA.
GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:0005248; F:voltage-gated sodium channel activity; IEA.
GO; GO:0006812; P:cotion transport; IEA.
GO; GO:0006814; P:sodium ion transport; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Proc. Natl. Acad. Sci. U.S.A. 92:11034-11038(1995).
-!- SUBCELLULAR LOCATION: Integral membrane protein (By
-!- SIMILARITY: Belongs to the sodium channel family.
BMBL; U35238; AAA89159.1; -.
HSSP; P04775; 1BYY.
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STRAIN=New Zealand White; TISSUE=Sciatic nerve;
MEDLINE=96074641, PubMed=7479931;
Belcher S.M., Zerillo C.A., Levenson R., Ritchie J.M.,
"Cloning of a sodium channel alpha subunit from rabbit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sodium channel alpha-subunit,
Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
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Q28644;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SMART; SM00015; IQ; 1.

Ion transport; Ionic channel; Sodium channel; Transmembrane;
Transport; Voltage-gated channel.

SEQUENCE 1977 AA; 225195 MW; 17D67CBC32BC15FB CRC64;
                                                                                                                                                                                                                                                       Local
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                                                                                                                                                                                                                                                                                                                     Voltage-gated channel.
1984 AA; 225748 MW;
       PRELIMINARY;
                                                                                                                                                                                                                 75.0%; Score 21; larity 100.0%; Pred. No. Conservative 0; Mismatcl
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Last annotation update)
  PRT;
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3.1e-11;
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Q25150
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                                                                                   RESULT 16
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RA Slangameswran L., Fish L.M., Koch B.D., Rabert D.K., Delgado S.G.,
RA Slewart G.R., Herman R.C., Chan H., Eglen R.M., Hunter J.C.;
RA Delgado S.G., Chan H., Eglen R.M., Hunter J.C.;
RT "A novel tetrodotoxin-sensitive, voltage-gated sodium channel
RT expressed in rat and human dorsal root ganglia.";

CC -!- SUBCELLULAR LOCATION: Integral membrane protein (By similarity).
CC -!- SIMILARITY: Belongs to the sodium channel family.

DR EMBL; HP000368; AAB50403.1; -.

DR EMBL; HP000368; AAB50403.1; -.

DR GO; GO:0016031; C:integral to membrane; IEA.

CG GO:001518; C:voltage-gated sodium channel complex; IEA.

CG GO:0005218; C:voltage-gated sodium channel activity; IEA.

CG GO:0005248; F:cation channel activity IEA.

CG GO:0005248; F:cation channel activity IEA.

CG GO:0005249; F:cation transport; IEA.

DR GO; GO:0006814; P:sodium ion transport; IEA.

DR GO; GO:0006814; P:sodium fon transport; IEA.

DR GO; GO:0006814; P:sodium fon transport; IEA.

DR InterPro; IPR001682; Ca/Na pore.

DR InterPro; IPR001682; Ca/Na pore.

DR InterPro; IPR001696; Na channel nlg.

RI InterPro; IPR001696; Na channel nlg.

DR InterPro; IPR001696; Na channel nlg.

DR InterPro; IPR001696; Na channel nlg.

DR Ffam; PF00612; IQ; 1.

DR Pfam; PF00612; IQ; 1.

DR Pfam; PF00612; Na trans assoc; 1.

CR Pfam; PF00612; Na trans assoc; 1.

CR Pfam; PF00612; Na trans assoc; 1.

CR Pfam; PF00612; IQ; 1.

DR InterPro; IDRO Channel Sodium channel: Transmembrane:
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Best Local S
Matches 21
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    008562;
01-JUL-1997
01-JUL-1997
05-JUL-2004
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MEDLINE=97007982; PubMed=8854872;
Kozak C.A., Sangameswaran L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PN1 (Voltage-gated sodium channel) (Fragment).
Rattus norvegicus (Rat).
Rukaryota; Metazoa; Chordata; Craniata; Verteb
Mammalia; Eutheria; Rodentia; Sciurognathi; Mu
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                                                                                                                                                                                                                                                                                                                                                                                                                          Voltage-gated channel.
1984 1984
                                                                                                                                                                                                                                                                                                                                                                                                       1984 AA;
                                                                                                                                                                                                                                                                                    Conservative
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(TrEMBLrel. 04, Last sequence update)
(TrEMBLrel. 27, Last annotation updat
                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                            75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                 226037 MW;
                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                          Score 21;
Pred. No.
                                                                                                                                                                 405
                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                           386C38B9B5097091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            channel; Transmembrane;
                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                        3.1e-11;
es 0;
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                                                                                                                                                                                                                                                                                                                                Length 1984;
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S., Mandel G.;
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                                                                                                                                                                                                                                                                  Gaps
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Q25150 Q25150;

PRELIMINARY;

PRT;

2049 AA

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CIN4 HOMAN
ID CIN4
AC p3543
DT 01-U
DT 05-U
DT 05-U
DE SOdiv
DE Chan
DE Alpha
GN Name
GN Name
GN Name
GN Homo
OC Eukar
OC Mamma
OX N(BI
RN [1]
RP SEQUE
RX MEDI
RA GGOOG
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RA GGOOG
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R HSSP; P04775; 1BYY.

R GO; GO:0016021; C:integral to membrane; IEA.
R GO; GO:001618; C:voltage-gated sodium channel com
R GO; GO:0005261; F:cation channel activity; IEA.
R GO; GO:0005248; F:voltage-gated sodium channel act
GO; GO:0005248; F:voltage-gated sodium channel act
GO; GO:0006812; P:cation transport; IEA.
R GO; GO:0006812; P:cation transport; IEA.
R InterPro; IPR001682; Ca/Na pore.
R InterPro; IPR001682; Ca/Na pore.
R InterPro; IPR005211; Cat_channel TrpL.
IN InterPro; IPR00521; Ion_trans.
DR InterPro; IPR005821; Ion_trans.
DR InterPro; IPR005821; Na_trans.
DR InterPro; IPR001696; Na_channel.
DR InterPro; IPR010526; Na_trans_assoc.

Therefore iPR010526; Na_trans_assoc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                     CIN4 HUMAN STANDAKU;
CIN4 HUMAN STANDAKU;
P35459; Q15478; Q16447; Q7Z6B1;
P35459; Q16447; Q16447; Q16448; Q16448;
P35459; Q16447; Q16448; Q164
                                                                                                                                                                                                                                                                Homo sapiens (Human)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00520; Ion trans; 4. Pfam; PF00612; IO; 1. Pfam; PF06512; Na trans assoc; PRINTS; PR00170; NACHANNEL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
MEDLINE=95033215; PubMed=7946338;
Okamura Y., Ono F., Okagaki R., Chong J., Mandel
"Neural expression of a sodium channel gene requi
                            MEDLINE=92246457; PubMed=1315496;
George A.L. Jr., Komisarof J., Kallen
"Primary structure of the adult human
                                                                                                                          SEQUENCE FROM N.A., AND TISSUE-Skeletal muscle;
                                                                                                                                                                                                                                                                                                                                                                             Name=SCN4A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PRO0170; NACHA SMART; SM00015; IQ; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Stolidobranchia; Pyuridae; NCBI_TaxID=7729;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Halocynthia roretzi
Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-NOV-1996 (TremBLre
01-MAR-2004 (TremBLre
Voltage-gated sodium
Name=TuNaI;
                                                                                                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Neuron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 interactions.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     transport; Ionic channel; Sodium channel; Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: Integral SIMILARITY: Belongs to the sodi L; D17311; BAA04133.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VIFLGSFYLINLILAVVAMAY 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VIFLGSFYLINLILAVVAMAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Voltage-gated channel.
2049 AA; 233443 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                   Chordata;
Primates;
                                                                                                                                                                 AND
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Chordata; Urochordata;
uridae; Halocynthia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26,
                                                                                                                                                                 VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 21;
Pred. No.
                                                                                                                                                                                                                                                                   Craniata; Vertebrata;
Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                    ASP-559.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F7DE3578105B73FB
                            R.G., Barchi R.I
skeletal muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
3.1e-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nndel G.;
requires cell-specific
                                                                                                                                                                                                                                                                                                                                                                                                                                 (Voltage-gated sodium
| protein, skeletal muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2049;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      complex;
i R.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CRC64;
                                                                                                                                                                                                                                                                                                      Euteleostomi;
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Ptacek L.J., George A.L. Jr.,
Barchi R.L., Robertson M., Leg
"Identification of a mutation
periodic paralysis.";
Cell 67:1021-1027(1991).
(10]
(10]
VARIANT PMC ARG-1433.
VARIANT PMC ARG-1433.
VAINTINE-93270429; PubMed-8388676;
VAINTINE-93270429; E., Kwiecinski H.,
                                                                                                                                                                       MEDLINE=93265141; PubMed=1338909; McClatchey A.I., McKenna-Yasek D., Cros D., Worthen H.G., Mesella J.F., Brown R.H. Jr. Desilva S.M., Cornblath D.R., Gusella J.F., Brown R.H. Jr. "Novel mutations in families with unusual and variable disthe skeletal muscle sodium channel."; Nat. Genet. 2:148-152(1992).
                                                                                                                                                                                                                                                                     subunit in hyperkalaemic periodic paralysis.",
Nature 354:387-389(1991)
                                                                                                                                                                                                                                                                                                                       Rojas C.V., Wang
Brown R.H. Jr.;
                                                                                         Ptacek L.J., George A.L. Jr., Barchi R.L., Robertson M., Leppert M.F.;
"Mutations in an S4 segment of the adult s)
                                                                                                                                  VARIANTS PMC CYS-1448 AND HIS-1448. MEDLINE=92265302; PubMed=1316765;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               congenita."
Cell 68:769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of the skeletal muscle sodium channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=92154689; PubMed=1310898; McClarchey A.I., van den Bergh P., Verellen C., McKenna-Yasek D., Rao Brown R.H. Jr., Gusella J.F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=92069747; PubMed=1659948;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A., AND VARIANT ASN-1376.
MEDLINE=93338444; PubMed=1339144;
MCClatchey A.I., Lin C.S., Wang J., Hoffn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tsujino A., Maertens C., Cannon S.C., Engel A.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Sequence and genomic structure of the sodium channel alpha subunit gene on 17 slichem. Biophys. Res. Commun. 182:794
                                                                  channel cause paramyotonia
Neuron 8:891-897(1992).
                                                                                                                                                                                                                                                       VARIANTS PMC PHE-804 AND THR-1156.
                                                                                                                                                                                                                                                                                                                                                 MEDLINE=92065978; PubMed=1659668;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VARIANT HYPP MET-704.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 1305-1339 FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Myasthenic syndrome caused by Proc. Natl. Acad. Sci. U.S.A. :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=22684480; PubMed=12766226; DOI=10.1073/pnas.1230273100; Tsujino A., Maertens C., Ohno K., Shen X.-M., Fukuda T., Harper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Temperature-sensitive mutations in the III-IV cytoplasmic of the skeletal muscle sodium channel gene in paramyotonia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A., VARIANT MYASTHENIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hoffmann E.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WEDLINE=92134303;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   dependent sodium channel.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Neurol. 31:131-137(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 68:769-774(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        genomic structure of the human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rojas C.V.,
                                                                                                                                                                                                                                                                                                                                   Wang J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1:521-521 (1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AND ASN-1376.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed=1310396;
                                                                                                                                                                                                                                                                                                                                   Schwartz L.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zhou J.,
                                                                                                                                                                                                                                                                                                                                                                                                                        M., Leppert
                                                                             congenita.";
                                                                                                                                                                                                                                                                                                                                                                                                               , Griggs R.C.,
eppert M.F.;
n in the gene c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      / mutation of the SCN4A sodium channel.";
100:7377-7382(2003).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Schwartz L.S., Nicholas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ene on 17q.";
182:794-801(1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pericak-Vance
K., Haines J.L
                                                                                                                                                                                                                                                                                                                                     Hoffman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          skeletal muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hoffman
               McManis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARIANTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Haines J.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SYNDROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human adult
                                                                                              skeletal
                                                                                                                                                                                                                                                                                                                                                                                                                  causing hyperkalemic
                                                                                                                    Griggs
                                                                                                                                                                                                                                                                                                                                   E.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                            Tawil
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                Mendell J.R.,
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L., Bird T.,
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disorders
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"Voltage-sensor sodium channel mutations cause hypokalemic periodic paralysis type 2 by enhanced inactivation and reduced current.";
                                   Fontaine B., Lehmann-Horn F.;
                                                                                                                                Sugiura Y., Aoki T., Sugiyama Y., Hida C., C "Temperature-sensitive sodium channelopathy and cold-induced paralysis.";
Neurology 54:2179-2181(2000).
                                                      Jurkat-Rott K., Mitrovic N.,
Herzog J., Lerche H., Nicole
                                                                                       PubMed=10944223;
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                                                                                                                                                                                                                                                                         "A novel sodium channel mutation in a family with paralysis.";
                                                                                                                                                                                                                                                                                                           Bulman D.E.,
Tollar L.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=96154961; PubMed=8580427; Koch M.C., Baumbach K., George A.L., Ricker "Paramyotonia congenita without paralysis omutation in the SCN4A gene (Vall293Ile)."; NeuroReport 6:2001-2004(1995).
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                                                                                                                                                                                                                                                                                                                                            PubMed=10599760;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PubMed=9392583;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             congenita, paramyotonia congenita, and
paralysis.";
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Heine R., Pika U., Lehmann-Horn F.;
"A novel SCN4A mutation causing myotonia
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[14]
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Browatzki M.,
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odic paralysis.";
Neurol. 33:300-307(1993).
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Ebers G.C.;
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Vale-Santos
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Santos J.,
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heat-induced
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nsive myotonia
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RESULT 18
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Matches
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-!- SUBUNIT: Muscle sodium channels contain an alpha subunit and a smaller beta subunit. Interacts with the PDZ domain of the syntrophin SNTA1. SNTB1 and SNTB2 (By similarity).
-!- SUBCELLULAR LOCATION: Integral membrane protein.
-!- DOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1,S2,S3,S5,S6) and one positively charged segment (S4). Segments S4 are probably the voltage-sensors and are characterized by a series of positively charged amino acids at every third position.
-!- DISEASE: Defects in SCN4A are the cause of paramyotonia congenita of von Eulenburg (PMC) [MIM:168300]. PMC is an autosomal dominant sodium channel disease characterized by myotonia, increased by exposure to cold, intermittent flaccid paresis, not necessarily
                                                                      Trimmer J.S., Cooperman S.S., Tomiko Boyle M.B., Kallen R.G., Sheng Z., Bu Goodman R.H., Agnew W.S., Mandel G., "Primary structure and functional exymuscle sodium channel.";
Neuron 3:33-49(1989)
                                                                                                                                                                                                                                                                                          01-APR-1990 (Rel. 14, Created)
01-APR-1990 (Rel. 14, Last sequence update)
05-7UL-2004 (Rel. 44, Last annotation update)
Sodium channel protein type IV alpha subunit
channel alpha subunit Navl.4) (Sodium channel
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                                                                                                                                                          MEDLINE=90148778; PubMed=2559760;
                                                                                                                                                                                                       NCBI_TaxID=10116;
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Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                   alpha-subunit)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Neurology 57:1323-1325(2001-1- FUNCTION: This protein
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FUNCTION. This protein mediates the voltage-dependent south in permeability of excitable membranes. Assuming opened or closed conformations in response to the voltage difference across the membrane, the protein forms a sodium-selective channel through
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are associated with
periodic paralysis.";
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2.6e-10;
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i R.L.,
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Pfam; PF00520; Ion_trans; 4.
Pfam; PF00612; IQ; 1.
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Pfam; PF06512; Na trans assoc; 1
PRINTS; PR0170; NACHANNEL.
PRINTS; PR01665; NACHANNEL4.
PROSITE; PS50096; IQ; 1.
Glycoprotein; Ion transport; Ion
Phosphorylation; Repeat; Sodium
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InterPro; IPR002111; Cat_channel_TrpL.
InterPro; IPR005821; Ion_trans:
InterPro; IPR005821; Ion_trans:
InterPro; IPR005820; M-channel_nlg.
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InterPro; IPR001696; Na_channel_4.
InterPro; IPR016526; Na_trans_assoc.
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                                                                                                                                                                                                                                                                                                            TRANSMEM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; M26643; AAA41682.1; -. PIR; JN0007; CHRTM1. HSSP; P04775; 1BYY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           between the Swiss Institute of Bioinformatics the European Bioinformatics Institute. There a use by non-profit institutions as long as i modified and this statement is not removed. Us
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DOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1,S2,S3,S5,S6) and one positively charge segment (S4). Segments S4 are probably the voltage-sensors and characterized by a series of positively charged amino acids at every third position.

SIMILARITY: Belongs to the sodium channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBUNIT: Muscle sodium channels contain an alpha subunit and smaller beta subunit. Interacts with the PDZ domain of the syntrophin SNTA1, SNTB1 and SNTB2 (By similarity).
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GO; GO:0001518; C:voltage-gated sodium channel GO;
GO:00005261; F:cation channel activity; IEA.
GO; GO:0005248; F:voltage-gated sodium channel act
GO; GO:0005248; F:voltage-gated sodium channel act
GO; GO:0006812; P:cation transport; IEA.
GO; GO:0006814; P:sodium ion transport; IEA.
InterPro; IPR001682; Ca/Na_pore.
InterPro; IPR005182; Ca/Na_pore.
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InterPro; IPR010582; Na_channel.
InterPro; IPR010582; Na_channel.
                               Pfam; PF00520; Ion trans; 4.
Pfam; PF00612; IQ; 1.
Pfam; PF06512; Na trans assoc; 1
PRINTS; PR00170; NACHANNEL.
PRINTS; PR01665; NACHANNEL4.
SMART; SM00015; IQ; 1.
PROSITE; PS50096; IQ; 1.
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"Expression of skeletal muscle-type voltage-gated and human prostate cancer cell lines.";
FEBS Lett. 427:5-10(1998)
-i- SUBCELLULAR LOCATION: Integral membrane proteins SIMILARITY: Belongs to the sodium channel fami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         variant.
Name=SCN4A;
                                                                                                                                                                                                                                                                                           EMBL; Y17153; CAA76659.1;
HSSP; P04775; 1BYY.
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                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=Copenhagen; TISSUE=Prostate; MEDLINE=98273645; PubMed=9613589;
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Voltage-gated channel.
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(TrEMBLrel. 07, Last sequence update)
(TrEMBLrel. 26, Last annotation update)
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Ionic channel; Sodium channel; Transmembrane;
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sodium channel family.
B1DFFA538E264B40 CRC64;
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REMEL, AA278787; CACTATAGE

REMEL, AA278787; CACTAGE

REMEL, AA2787878; CACTAGE

REMEL, AA278787; CACTAGE

REMEL, AA2787878, CACTAGE

REMEL, AA278787; CACTAGE

REMEL, AA278787; CACTAGE

REMEL, AA27878, CACTA
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Q90518;
                                                                                                                                                                                                                                                                        Zimmer T., Benndorf K.;

The mouse heart sodium channel (mH1): cloning and characterization (alternatively spliced variants.";

Am. J. Physiol. Heart Circ. Physiol. 282:H1007-H1017(2002).

-i- SUBCELIULAR LOCATION: Integral membrane protein (By similarity).

-i- SIMILARITY: Belongs to the sodium channel family.

EWBL; AJ278787; CAC17146.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=balb/c; TISSUE=Heart; MEDLINE=21823196; PubMed=11834499;
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
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01-MAR-2001 (TrEMBLrel. 16, Last
01-MAR-2004 (TrEMBLrel. 26, Last
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                                                                                                                                     IFLGSFYLINLILAVVAMAY 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9 IFLGSFYLINLILAVVAMAY 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IFLGSFYLINLILAVVAMAY 444
                                                                                                                                                                                                                                                                      1841 AA;
                                                                                                                                                                                    ilarity 100.0%; F
Conservative 0;
                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                    208796 MW;
                                                                                                                                                                                                                               71.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          71.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        channel.
                                                                                                                                                                                                        Score 20; ; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    k; Score 20; DB
k; Pred. No. 2.6
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                            444
              PRT;
                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                             0766DFD33A9E0E55 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence update)
              530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1841
                                                                                                                                                                                                      DB 2; Le 2.6e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2; Le
2.6e-10;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                    ç
                                                                                                                                                                                                                      Length 1841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1840;
                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ٥,
                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
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RP SEQUENCE FROM N.A.

RC STRAIN=AB; TISSUB-Whole body;

RX MEDILINE=22388257; PubMed=12477932;

RX MEDILINE=22388257; PubMed=12477932;

RX MEDILINE=2388257; PubMed=12477932;

RX Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

RA Strausberg R.L., Feingold E.A., Grouse L.H., Schaefer C.M., Schuler G.D.,

RA Klausner R.D., Colling F.S., Wagner L., Shenmen C.M., Schuler G.D.,

RA Klausner R.D., Colling F.S., Wagner L., Schaefer C.F., Bhat N.K.,

RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Haigh P.,

RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Heigh P.,

RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

RA Brownstein M.J., Uddin T.B., Toshiyuki S., Carninci P., Prange C.,

RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

RA Robards S., Mozley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

RA Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,

RA Rhiting M., Madan A., Young A.C., Shevchenko, V., Bouffard G.G.,

RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,

RA Jones S.J., Marra M.A.;

RA Jones S.J., Marra M.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q803T8
Q803T8;
Q1-JUN-2003;
Q1-JUN-2003;
Q1-QCT-2003;
         Jones S.J., Marra M.A.;
"Generation and initial analysis
                                                                                                                                                                                                                                                                                                                                                                                                                                Brachydanio rerio (Zebrafish)
Bukaryota; Metazoa; Chordata;
Actinopterygii, Neopterygii; T
Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         polypeptide.
Name=zgc:55600;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similar to sodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (AUG-1994) to the EMBL/GenBank/DDBJ database:
EMBL; D37976; BAA07194.1; -.
G0; G0:0016021; C:integral to membrane; IEA.
G0; G0:0005261; F:cation channel activity; IEA.
G0; G0:0005812; F:cation transport; IEA.
InterPro; IPR005821; Ion trans.
InterPro; IPR005820; M+channel nlg.
Pfam; PF00520; Ion trans; 1.
Ion transport; Ionic channel; Transmembrane; Transport.
NON TER
530
530
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01-NOV-1996
01-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Sodium channel alpha subunit (Fragment).
Pugu rubripes (Japanese pufferfish) (Takifugu rubripes).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei, Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Tetradontiformes;
Tetradontoidea; Tetraodontidae; Takifugu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nakazawa A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE≖Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=31033;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57.1%; Silarity 100.0%; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          channel,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60164 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24, Created)
24, Last sequence update)
25, Last annotation update)
el, voltage-gated, type 1, alpha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 01, Creat
. 01, Last
. 24, Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            407
                                                                                                                                                                                                                                                                                                                                                                                                                                      ) (Danio rerio).
; Craniata; Vertebrata; Euteleostomi;
Teleostei; Ostariophysi; Cypriniformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 16;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2F9AE902C8F74071 CRC64;
           of more
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2; L
         than 15,000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 530;
     full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
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R HSSP; P04775; 1BYY.

R GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0001518; C:voltage-gated sodium channel com
GO; GO:000528; F:cation channel activity; IEA.
R GO; GO:000528; F:cation channel activity; IEA.
R GO; GO:000528; F:voltage-gated sodium channel act
GO; GO:0006812; F:cation transport; IEA.
R GO; GO:0006814; P:sodium ion transport; IEA.
R InterPro; IPR001682; Ca/Na_pore.
R InterPro; IPR002111; Cat_Channel_TrpL.

NR InterPro; IPR005821; Ion_trans.
NR InterPro; IPR005821; Ion_trans.
NR InterPro; IPR005820; M+Channel_nlg.
DR InterPro; IPR005820; M+Channel_Nlg.
NR InterPro; IPR001695; Na_channel_Nlg.
NR InterPro; IPR001695; 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
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Best Local S
Matches 16
Pfam; PF00520; Ion trans; 4.
Pfam; PF00512; NG; 1.
Pfam; PF00512; NG; Trans assoc; 1.
Pfam; PF00512; NA CHANNEL.
PRINTS; PR00170; NACHANNEL4.
PRINTS; PR00165; NACHANNEL4.
SMART; SM00015; IQ; 1.
PROSITE; PS0096; IQ; 1.
PROSITE; PS00978; WD REPEATS 1; UNKNOWN 1.
Ion transport; Ionic channel; Sodium chann Transport; Voltage-gated channel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (JAN-2003) to the EMBL/GenBank/DDBJ databases.
EMBL; BC044197, AAH44197.1; -.
HSSP; P08104; 1QG9.
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:0006212; P:cation transport; IEA.
InterPro; IPR001682; CA/Na pore.
InterPro; IPR005821; Ion trans.
InterPro; IPR005821; Ion trans.
InterPro; IPR005820; M+Channel nlg.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; U25990; AAA67366.1; -. HSSP; P04775; 1BYY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Equus caballus (Horse).
Eukaryota; Metazoa; Cho
Mammalia; Eutheria; Per
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-NAR-2004 (TrEMBLrel. 26, Last annotation update)
Skeletal muscle sodium channel alpha-subunit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q28371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q28371;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Strausberg R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=AB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        transport;
UENCE 711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PF00520; Ion trans; 1.
ransport; Ionic channel; Transmembrane; Transport.
NCE 711 AA; 80547 MW; 0BDE497E3BF85033 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Natl. Acad. Sci.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YMIFFVLVIFLGSFYL 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Whole body;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chordata; Craniata; Vertebrata;
Perissodactyla; Equidae; Equus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57.1%; Score 16; DB 100.0%; Pred. No. 7.7 cive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1834 AA
                              channel;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2; Le
7.7e-07;
                              Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         complex; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 711;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               activity; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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CINT 24
CINT ID CRIT
ID CRIT
ID CRIT
ID CRIT
ID 101-AL
DT 01-AL
DT
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Best Local S
Matches 16
                                    Pfam; PF00520; Pfam; PF00612; Pfam; PF06512; Pf0
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P08104;
01-AUG-1988 (Rel. 08, Created)
01-AUG-1988 (Rel. 08, Last sequence update)
01-OCT-2004 (Rel. 45, Last annotation update)
Sodium channel protein type III alpha subunit (Voltage-gated sodium channel alpha subunit Navi.3) (Sodium channel protein, brain III alpha subunit) (Voltage-gated sodium channel subtype III).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of excitable membranes. Assuming opened or closed conformations response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) io may pass in accordance with their electrochemical gradient.

-! SUBUNIT: The sodium channel consists of a large polypeptide and 3 smaller ones. This sequence represents a large polypeptide.

-! SUBCELLULAR LOCATION: Integral membrane protein.

-! DOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1, S2, S3, S5, S6) and one positively charge segment (S4). Segments S4 are probably the voltage-sensors and characterized by a series of positively charged amino acids at
                                                                                                                                                                                                                                              InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                          PIR;
PDB;
RGD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entities requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      between
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -!- FUNCTION: Mediates the voltage-dependent sodium ion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Primary structure of rat brain sodium channel III deduced from CDNA sequence.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kayano T., Noda M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=88137594; PubMed=2449363;
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                                                                                                                                           [nterPro;
                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                            [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                      L; Y00766; CAA68735.1; . ; S00320; S00320. ; 1QG9; NMR; A=156-176. ; 3635; SCn3a.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SWISS-PROT entry is copyright. It is produced through a collabeen the Swiss Institute of Bioinformatics and the EMBL outst European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       425 IFLGSFYLINLILAVV 440
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o; IPR005821; Ion_trans.
o; IPR00048; IO_region.
o; IPR0005820; M+Channel nlg.
o; IPR001696; Na_channel.
o; IPR001522; Na_trans_assoc.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2; Length 1834;
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                                                                       Homo sapiens (Human).
Eukaryota; Metazoa; Ch
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NCBI_TaxID=9606;
[1]
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SEQUENCE FROM N.A. Jeong S.-Y., Goto
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                                                                                                                                                                                                                      RL Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.

CC -! SUBCELLULAR LOCATION: Integral membrane protein (By similarity).

CC -! SIMILARITY: Belongs to the sodium channel family.

DR HSSP, P04775; IBYY.

DR HSSP, P04775; IBYY.

GO; GO:0016021; C:integral to membrane; IEA.

DR GO; GO:0005261; F:cation teampel complex; IEA.

DR GO; GO:0005261; F:cation channel activity; IEA.

DR GO; GO:0005248; F:voltage-gated sodium channel activity; IEA.

DR GO; GO:0005248; F:voltage-gated sodium channel activity; IEA.

DR GO; GO:0005814; F:cation transport; IEA.

DR GO; GO:0005814; P:sodium ion transport; IEA.

DR InterPro; IPR001682; Ca/Na pore.

DR InterPro; IPR001682; Ca/Na pore.

DR InterPro; IPR001811; Cat channel _TrpL.

DR InterPro; IPR001811; Cat channel _nlg.

DR InterPro; IPR005821; IOn_trans.

DR InterPro; IPR005821; IOn_trans.

DR InterPro; IPR005821; IOn_trans.

DR InterPro; IPR005820; Na_trans_assoc.

DR Ffam; PF00512; IO, 1.

DR Pfam; PF00512; Na_trans_assoc; 1.

DR Pf00512; Na_trans_assoc; 1.

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US-08-118-270-313
PCT-US93-08528-311
US-09-113-000C-571
US-09-113-001C-309
US-09-270-767-3893
US-09-113-001C-3099
US-08-039-38-352-692
US-09-113-001C-3099
US-08-039-38-352-692
US-09-113-904-7
US-09-113-904
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US-09-457-571-7; Sequence 7, Application US/09457571; Patent No. 6703486
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ZIP: 20005-3934

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN EC-DOS/MS-DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/836,325
FILING DATE: 2-MAY-1997
CLASSIFICATION PATA:
APPLICATION NUMBER: PCT/US95/14251
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/14251
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
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Best Local (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral PITLE OF INVENTION: Sodium Chan ITILE OF INVENTION: X-ray Diffx TITLE OF INVENTION: Drug Design, TITLE OF INVENTION: Thereof NUMBER OF SEQUENCES: 19
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: 7:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Ludwig, Steven R. 203 REGISTRATION NUMBER: 36,203 REFERENCE/DOCKET NUMBER: 09: TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: 08/3:
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
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STREET: 1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                        ENGTH:
                                                                                                                          401
                                                                                                                                         1 YMIFFVLVIFLGSFYLINLILAVVAMAY 28
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                                                                                                               MIFFVLVIFLGSFYLINLILAVVAMAY 428
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linear
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Sodium Channels, DNA Encoding Therefor, Crystallization,
X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and Using
Thereof
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Pred. No. 2.3e-19;
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US-08-836-325-15
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Best Local Similarity 100.
28; Conservative
                                                                                                                                             Sequence 15 Patent No.
                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,325
FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/14251
FILING DATE: 02-MOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-UN-1995
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/9/457,571
FILING DATE: 09-DEC-1999
CLASSIFICATION: 514
                                                                APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT: Halegoua, Simon
APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystall
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Mandel, G
APPLICANT: Halegoua,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION:
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APPLICATION NUMBER: 08/3:
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
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COUNTRY: USA
TTP: 20005-3934
TTP: TTADABLE F
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ADDRESSEE: STERNE, KESSLER,
STREET: 1100 New York Ave.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS: single
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Ludwig, Steven R. REGISTRATION NUMBER: 36
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                                                                                                                                             5, Application US/08836325 6110672
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                                                                                                       Mandel, Gail
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IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                                      100.0%; Score 28; DB 4; 100.0%; Pred. No. 2.3e-19;
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Sodium Channels, DNA Encoding Therefor, Crystallization,
X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and U
Thereof
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N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                     Mismatches
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GENERAL INFORMATION:
APPLICANT: Mandel, Gail
APPLICANT: Mandel, Gail
APPLICANT: Halegoua, Simon
APPLICANT: Halegoua, Simon
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
TOPOLOGY: not
MOLECULE TYPE: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 09
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION UNMBER: 08/33
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
PRIOR APPLICATION NIMBER: PCT/US95/14251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 1
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APPLICATION NUMBER: 08/482,401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                         TITLE OF INVENTION:
                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/I
FILING DATE: 02-NOV-1995
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FILING DATE: 2-MAY-1997
CLASSIFICATION: 514
COUNTRY: USA
ZIP: 20005-3934
                                          STATE:
                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Ludwig, Steven R. REGISTRATION NUMBER: 36,203
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                                                        CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                     363
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                                                                                                                                                                                                                                                                                                                                   Application US/09457571
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                                                                          E: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1835 amino acids
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                                                                                                                                                     Drug Design, Drug Screening, and Methods of Making and Using Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                75.0%; Score 21; DB 3; L
100.0%; Pred. No. 1.6e-12;
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Matches
                                                                                                                                                                                                                                                                                                                                                                                                                Patent No. 6110672
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
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CLASSIFICATION: 514
PRIOR APPLICATION NUMBER: 08/836
APPLICATION NUMBER: 08/836
APPLICATION NUMBER: 02-MAY-1997
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TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 08/482,401 FILING DATE: 07-JUN-1995 PRIOR APPLICATION DATA:
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FILING DATE: 02-NOV-
PRIOR APPLICATION DATA:
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                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 1
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ATTORNEY/AGENT INFORMATION:
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CURRENT APPLICATION DATA:
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               COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0,
                                                                                                               ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: not relevant
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                CITY: Washington
                                                                                                                                                                                        STREET:
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                                                                                                                               COUNTRY:
                                                                                                                                                                                                      ADDRESSEE:
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                                                                                                             20005-3934
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                                                                                                                                 USA
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                                                                                                                                                                                                                                                               Peripheral Nervous System Specific Sodium Channels, DNA Encoding Therefor, Crystallization, X-ray Diffraction, Computer Molecular Modeling, Rational Drug Design, Drug Screening, and Methods of Making and UThereof
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                   Version
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Using

APPLICATION NUMBER: US/08/836,325 FILING DATE: 2-MAY-1997

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Sequence 10, 13486; Patent No. 6703486; Patent INFORMATION:
                                                                                                                               COUNTRY: USA
ZIP: 20005-3934

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/457,571
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                                       PILING DATE: 09-DEC-1999
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836
FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
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Best Local &
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PRIOR APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 19
CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
STREET: 1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                 STREET: 1100
CITY: Washington
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           APPLICATION NUMBER: PCT/
FILING DATE: 02-NOV-1995
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TELEPHONE: 202-371-2600
TELEFAX: 202-371-2540
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PRIOR APPLICATION DATA:
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/41
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TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: amino acid
STRANDEDNESS: not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
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6703486
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Similarity 100.0%; Pred. No. 1.7e-12;
21; Conservative 0; Mismatches 0;
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Sodium Channels, DNA Encoding Therefor, Crystallization,
X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and Using
Thereof
                            PCT/US95/14251
                                                                                 08/836,325
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PRIOR APPLICATION NUMBER: 60/240,409
PRIOR FILING DATE: 2001-10-12
PRIOR FILING DATE: 2000-10-12
NUMBER OF SEQ ID NOS: 1143
SOFTWARE: PERL PROGram
SEQ ID NO 757
LENGTH: 1977
                                                                        US-09-919-039-367; Sequence 367, Application US/09919039; Patent No. 6727066; GENERAL INFORMATION:
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Matches
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                                                                                                                                                                                                                                                                                     Query Match
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CURRENT APPLICATION NUMBER: US/09/919,039
CURRENT FILING DATE: 2002-09-09
                       APPLICANT: Kaser, Matthew R.

TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES
FILE REFERENCE: PA-0035 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 757, Application US/09976594
Patent No. 6673549
GENERAL INFORMATION:
APPLICANT: Furness, Michael
APPLICANT: Buchbinder, Jenny
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REFERENCE DOCKET NUMBER: 0917
TELECOMMUNICATION INFORMATION:
TELEPRINE: 202-371-2600
TELEFRAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
INFORMATION: 1060 smin. 70:14.
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NAME/KRY: misc feature
OTHER INFORMATION: Incyte ID No. 6673549 1719478CD1
                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
STRANDEDNESS: not rele
TOPOLOGY: linear
MOLECULE TYPE: protein
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FILLING DATE: 07-7UN-1995
PRIOR APPLICATION NUMBER: 08/334
APPLICATION NUMBER: 08/334
FILLING DATE: 02-NOV-1994
ATTORNEY, AGENT INFORMATION:
NAME: Ludwig, Steven R.
                                                                                                                                                                                                                                                                    Local
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Local Similarity 100.0%; Pred. No. 1.7e-12;
Les 21; Conservative 0; Mismatches 0;
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                                                                                                                                                                                                                                                                   Similarity
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07-JUN-1995
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100.0%; Pr
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; Pred. No.
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NAME/KEY: misc feature
OTHER INFORMATION: Incyte ID No. 6727066 1719478CD1
US-09-919-039-367
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PRIOR FILING DATE: 2000-07-28
NUMBER OF SEQ ID NOS: 401
SOFTWARE: PERL Program
SEQ ID NO 367
SEQ ID NO 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No.
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Best Local Similarity
                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: PCT/US95/142
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION NUMBER: 08/334,029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                       TELEFAX: 202-371-2540 INFORMATION FOR SEQ ID NO: 10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Homo sapiens
SEQUENCE CHARACTERISTICS:
LENGTH: 1984 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                      NAME: LIDWIG, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 0917.0240002
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US/08/836,325
FILING DATE: 2-MAY-1997
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 20005-3934

COMPUTER READABLE FORM:
MEDIUM TYPE: Ploppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Re-lease #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 1
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                                                                                                                                                                                                                                             FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 1100 New CITY: Washington
                                                                                                                                     TELEPHONE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
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                                                                                                                                     202-371-2600
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RESULT 10
US-09-457-571-10
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                                                                          , MOLECULE TYPE: protein US-09-457-571-10
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 Matches
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GENERAL INFORMATION:
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Best Local Similarity
                                     Query Match
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,325

FILING DATE: 02-MAY-1997

PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/142

FILING DATE: 02-NOV-1995

PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
                                                                                                                                               INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 1984 amino aci
                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: 08/482
FILING DATE: 07-UN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 09
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
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APPLICANT:
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                 Local Similarity
                                                                                                                                                                                                                                                                                   NAME: Ludwig, Steven R. REGISTRATION NUMBER: 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: FILING DATE: 09-DEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET:
                                                                                                              TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
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: DC
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Conservative (
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               75.0%; Score 21; DB 4; I
100.0%; Pred. No. 1.7e-12;
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 Mismatches
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                                     Length 1984;
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RESULT 12
US-08-836-325-12
/ Sequence 12, Application US/08836325
/ Patent No. 6110672
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GENERAL INFORMATION:
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US-08-836-325-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/836,325
APPLICATION BATE: 2-MAY-1997
CLASSIFICATION: 514
PRIOR APPLICATION DATE: 02-MOY-1995
PRIOR APPLICATION NUMBER: PCT/US95/14251
FILING DATE: 02-MOY-1995
PRIOR APPLICATION DATE: 08/482,401
FILING DATE: 07-UN-1995
                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO: 11: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
NAME: Ludwig, Steven R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 11,
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                                                                                                                                                                                                                                                                         MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 0917.0240002
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: peripheral N
TITLE OF INVENTION: Sodium Chann
TITLE OF INVENTION: X-ray Diffra
TITLE OF INVENTION: Drug Design,
TITLE OF INVENTION: Thereof
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
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APPLICANT:
                                                                                                                                                                                                                                                                                                TYPE: amino acid
STRANDEDNESS: no
TOPOLOGY: not re
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REGISTRATION NUMBER: 30
                                                                                                                                                                                                                                                                                                                                                  LENGTH:
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SOFTWARE: PatentI:
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                                                                                                              385 VIFLGSFYLINLILAVVAMAY 405
                                                                                                                                              8 VIFLGSFYLINLILAVVAMAY 28
                                                                                                                                                                                                          Similarity
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T: 1100 New York Ave., N. W., Suite 600
Washington
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                                                                                                                                                                                                                                                                                            not relevant
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Sodium Channels, DNA Encoding Therefor, Crystallization,
X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and Using
Thereof
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                                                                                                                                                                                                  Score 21; DB 3;
Pred. No. 1.7e-1
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                                                                                                                                                                                                               Length 1989;
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US-09-457-571-11
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Patent INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                          Matches
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Best Local :
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INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
FENGTH: 1989 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE: FLORM:

MEDIUM TYPE: FLORDY disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: PStentIn Release #1.0, Version

APPLICATION DATA:

APPLICATION NUMBER: US/08/836,325

FILING DATE: 2-MAY-1997

CLASSIFICATION DATA:

APPLICATION NUMBER: PCT/US95/14251

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/482,401

FILING DATE: 07-WOV-1995

PRIOR APPLICATION NUMBER: 08/334,029

FILING DATE: 07-WOV-1994

APPLICATION NUMBER: 08/334,029

FILING DATE: 02-NOV-1994

ATTORNEY/AGENT INFORMATION:

REGISTRATION NUMBER: 36,203

REFERENCE/DOCKET NUMBER: 0917.0240002

TELERHONE: 202-371-360
APPLICANT: Mandel, Gail
APPLICANT: Halegoua, Simon
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: x-ray Diffraction, Computer Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
NUMBER OF SEQUENCES: 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Mandel, G
APPLICANT: Halegoua,
APPLICANT: Borden, L
TITLE OF INVENTION:
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COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 1100
STREET: Mashington
CTATE: DC
TTATE: TCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS: not relevant TOPOLOGY: not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
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STREET: 1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                               385
                                                                                                                                                                                                                                                                                                                                            8 VIFLGSFYLINLILAVVAMAY 28
                                                                                                                                                                                                                                                                                                                                                                                                      21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                         VIFLGSFYLINLILAVVAMAY 405
                                                                                                                                                                                                                      Application US/09457571
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INVENTION: Peripheral Nervous System Specific
INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
INVENTION: Drug Design, Drug Screening, and Methods of Making and U.
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100.0%; Pred. No.
tive 0; Mismatc
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US-09-457-571-12
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Best Local Similarity 100.
Matches 21; Conservative
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FILING DATE: 02-MAY-1997

PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/14251

FILING DATE: 02-MOV-1995

PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION UMBER: 08/482,401

FILING DATE: 07-JUN-1995

PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334,029

FILING DATE: 02-MOV-1994

APPLICATION NUMBER: 08/334,029

FILING DATE: 02-MOV-1994

APPLICATION TON DATA:
APPLICATION NUMBER: 08/334,029

FILING DATE: 02-MOV-1994

APPLICATION TON DATA:
APP
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                                                                                                                                                                                                               APPLICANT: Mandel, Gail
APPLICANT: Halegoua, Simon
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
NUMBER OF SEQUENCES: 19
CORRESPONDENCE ADDRESS:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
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MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30
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FILING DATE: 09-DEC-1999
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
COMPUTER READABLE FORM:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acid
STRANDEDNESS: no
TOPOLOGY: not re
                                COUNTRY: USA
ZIP: 20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Ludwig, Steven R. REGISTRATION NUMBER: 36,203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 1100 New
CITY: Washington
STATE: DC
                                                                                                                                              CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
STREET: 1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        385 VIFLGSFYLINLILAVVAMAY 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8 VIFLGSFYLINLILAVVAMAY 28
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                                                                                                                                                                                           E: STERNE, KESSLER,
1100 New York Ave.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   202-371-2540
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                                                                                                                                                                                           KESSLER, GOLDSTEIN & FOX P.L.L.C ork Ave., N. W., Suite 600
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APPLICANT: GU, WG:

TITLE OF INVENTION: NOVEL HUMAN ION CHANNEL AND TRANSPORTER FAMILY MEMBERS
FILE REFERENCE: 10448-190001
CURRENT APPLICATION NUMBER: US/10/162,012
CURRENT APPLICATION NUMBER: US 60/209,845
PRIOR APPLICATION NUMBER: US 60/209,845
PRIOR PILLING DATE: 2000-06-06
PRIOR APPLICATION NUMBER: US 09/875,321
PRIOR APPLICATION NUMBER: US 09/875,321
PRIOR APPLICATION NUMBER: PCT/US01/18340
PRIOR FILLING DATE: 2001-06-06
PRIOR FILLING DATE: 2001-06-06
PRIOR APPLICATION NUMBER: US 60/209,257
PRIOR APPLICATION NUMBER: US 09/875,423
PRIOR APPLICATION NUMBER: US 09/875,423
PRIOR APPLICATION NUMBER: PCT/US01/18398
PRIOR APPLICATION NUMBER: PCT/US01/18398
PRIOR FILLING DATE: 2001-06-05
PRIOR FILLING DATE: 2001-06-05
PRIOR APPLICATION NUMBER: US 60/209,238
PRIOR APPLICATION NUMBER: US 60/209,238
PRIOR APPLICATION NUMBER: US 09/875,363
PRIOR APPLICATION NUMBER: US 09/875,363
PRIOR APPLICATION NUMBER: US 09/875,363
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US-10-162-012-24
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APPLICANT: Curtis, Rory A.J.
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Best Local Similarity 100.0%; Pred. No. 1.7e-12;
Matches 21; Conservative 0; Mismatches 0;
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FILING DATE: 09-DEC-1999
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,325
FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,40
PILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA: 08/334,02
PRIOR APPLICATION NUMBER: 08/334,02
PILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 0917
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
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INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 1989 amino acids
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Pelan-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: amino acid
STRANDEDNESS: not
TOPOLOGY: not re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compati
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09-DEC-1999
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APPLICATION NUMBER: PCT/US01/18247 FILING DATE: 2001-06-05

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APPLICANT: Herz, Joachim
APPLICANT: Gotthardt, Michael
ITITE OF INVENTION: LDL Receptor Signaling Pathways
ITILE REFERENCE: UTSWO708
CURRENT PILING DATE: 2000-05-01
NUMBER OF SEQ ID NOS: 132
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 81
LENGTH: 1024
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
FEATURE:
FEATURE:
TYPEOTHER THEORMATION: Description of Artificial Sequence:
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    OTHER INFORMATION: Description of Artificial Sequence: Synthetic
    OTHER INFORMATION: Sequence
    US-09-562-737-81

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                                                    Query Match
Best Local Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION NUMBER: US 60/279,281
PRIOR FILING DATE: 2001-03-28
PRIOR PPLICATION NUMBER: US 10/109,029
PRIOR PPLICATION NUMBER: PCT/US02/09728
PRIOR APPLICATION NUMBER: PCT/US02/09728
PRIOR FILING DATE: 2002-03-28
PRIOR APPLICATION NUMBER: US 60/290,288
PRIOR PILING DATE: 2001-05-11
PRIOR APPLICATION NUMBER: US (not assigned)
PRIOR APPLICATION NUMBER: US (not assigned)
PRIOR FILING DATE: 2002-05-13
                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 81, Application US/09562737 Patent No. 6428967 GENERAL INFORMATION:
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FILING DATE: 2000-08-21
APPLICATION NUMBER: US 09/934,421
FILING DATE: 2001-08-21
APPLICATION NUMBER: PCT/US01/26096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: PCT/US01/25475
FILING DATE: 2001-08-15
400 YMIFFVLVIFLGSFYL 415
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                     YMIFFVLVIFLGSFYL 16
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                                                             57....
100.0%; Pr
                                                                                   57.1%; Score 16; DB 4; I 100.0%; Pred. No. 7.8e-08;
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                                                                                                    Length 1024;
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RESULT 17

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; MOLECULE TYPE:
; HYPOTHETICAL: N
; ANTI-SENSE: NO
US-08-843-417-10
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US-09-527-013-10
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INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
CENGTH: 1956 amino acids
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GENERAL INFORMATION:
APPLICANT: Herman,
APPLICANT: Delgado,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-843-417-10
                                                                                                                                                                                                                                               Sequence 10, Application US/09527013 Patent No. 6479259
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, V.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/843,417
FILING DATE: April 15, 1997
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: SCHOOLOGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION: TELEPHONE: (415)-324-7041
TELEPAX: (415)-324-0638
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MEDIUM TYPE: Floppy disk
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APPLICANT: Rabert, Douglas K
TITLE OF INVENTION: CLONED PERIPHERAL NERVE
TITLE OF INVENTION: TETRODOTOXIN-RESISTANT 8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
nes 16; Conserv
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STRANDEDNESS: unl
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REGISTRATION NUMBER: 31,796
REFERENCE/DOCKET NUMBER: 28340-P1
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CORRESPONDENCE ADDRESS:
ADDRESSEE: Heller Ehrman White & McAuliffe
STREET: 525 University Ave
CITY: Palo Alto
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                          Sangameswaran, Lakshmi
Rabert, Douglas K
TITLE OF INVENTION: CLONED PERIPHERAL NERVE
TETRODOTOXIN-RESISTANT SODIUM CHANNEL alpha-SUBUNIT
                                                                                              NUMBER OF SEQUENCES: 10
                                                                                                                                                                                                                              APPLICANT: Herman, Ronald C
                                                                                                                                                                                                                                                                                                                                                                         1 YMIFFVLVIFLGSFYL 16
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373 YMIFFVLVIFLGSFYL 388
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: CA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                unknown
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Fish, Linda M
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                                                                                                                                                                                       Delgado, Stephen G
Fish, Linda M
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100.0%; Pred. No. 1.4e-(
ative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TETRODOTOXIN-RESISTANT SODIUM CHANNEL alpha-SUBUNIT
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COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk

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RESULT 19
US-08-843-417-2
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COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIA Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/843,417
FILING DATE: April 15, 1997
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: Schmonsees, William
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Herman,
APPLICANT: Delgado,
APPLICANT: Fish, L:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO: 10: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Sangameswaran, Lakshmi
APPLICANT: Sangameswaran, Lakshmi
APPLICANT: Rabert, Douglas K
TITLE OF INVENTION: CLONED PERIPHERAL NERVE
TITLE OF INVENTION: TETRODOTOXIN-RESISTANT SODIUM CHANNEL alpha-SUBUNIT
                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/527,013
FILING DATE: 16-Mar-2000
CLASSIFICATION E-Mar-2000
CLASSIFICATION E-Mar-2000
PRIOR APPLICATION: <Unknown>
PRIOR APPLICATION UNMBER: 08/843,417
APPLICATION NUMBER: 08/843,417
FILING DATE: <Unknown>
APPLICATION NUMBER: 08/843,417
FILING DATE: <Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: Schmonsees, William
REGISTRATION NUMBER: 31,796
REFERENCE/DOCKET NUMBER: 28340-P1
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                STREET: 525 Univ
                                                                                                                                                                                                                                         COUNTRY: U.S.A. ZIP: 94301
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS: unknown
TOPOLOGY: unknown
MOLECULE TYPE: peptide
HYPOTHETICAL: NO
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE DESCRIPTION: SEQ ID NO: 10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       373
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TELEFAX: (415)-324-0638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                           525 University Ave
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Delgado, Stephen G
Fish, Linda M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Herman, Ronald C
                                                                                                                                                                                                                                                                                                                                                 Heller Ehrman White & McAuliffe
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100.0%; Pred. No. 1.4e-07;
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US-09-527-013-2
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: (415)-324-7041
TELEPAX: (415)-324-638
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 1956 amino acids
                                                           INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
TOPOLOGY: not relevant
MOLECULE TYPE: protein
HYPOTHETICAL: YES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REGISTRATION NUMBER: 31,796
REFERENCE/DOCKET NUMBER: 28
TELECOMMUNICATION INFORMATION:
                                                                                                                                       COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/527,013
FILING DATE: 16-Mar-2000
CLASSIFICATION AUMBER: US/09/527,013
FILING DATE: 16-Mar-2000
CLASSIFICATION NUMBER: 08/843,417
APPLICATION NUMBER: 08/843,417
FILING DATE: cloknown>
APPLICATION NUMBER: 08/843,417
FILING DATE: cloknown>
ATTORNEY/AGENT INFORMATION:
NAME: Schmonsees, William
REGISTRATION NUMBER: 31,796
REFERENCE/DOCKET NUMBER: 28340-P1
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE TYPE: dorsal root ganglia CELL TYPE: peripheral nerve
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: Heller Ehrman White & McAuliffe
STREET: 525 University Ave
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Herman, Ronald C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            375 FFVLVIFLGSFYL 387
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STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/09527013
TYPE: amino acid
STRANDEDNESS: <U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 94301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rabert, Douglas K
OF INVENTION: CLONED PERIPHERAL NERVE
TETRODOTOXIN-RESISTANT SODIUM CHANNEL alpha-SUBUNIT
                                                                                                      TELEPHONE: (415)-324-7041
TELEFAX: (415)-324-0638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: U.S.A.
                                          LENGTH: 1956 amino acids
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Conservative 0;
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Linda M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46.4%; Score 13; DB
100.0%; Pred. No. 0.0
:ive 0; Mismatches
  <Unknown>
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hes 0;
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RESULT 22
US-08-669-656A-8
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Best Local Similarity
Watches 13; Conserva
                                                                                                                                                                                                                                                      ; MOLECULE TYPE: protein US-08-669-656A-2
                                                 Sequence 8, Application US/08669656A
Patent No. 6451554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: Wood, John N.
APPLICANT: Akopian, Armen N.
TITLE OF INVENTION: Ion Channel
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
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          GENERAL INFORMATION:
APPLICANT: Wood, John
APPLICANT: Akopian, Ar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-669-656A-2
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                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 1957 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Ver:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/669,656A
FILING DATE: 24-UN-1996
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Application US/08669656A Patent No. 6451554
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Best Local !
                                                                                                                                                                                                                                                                                                                                              NAME: Hohenschutz, Liza D.
REGISTRATION NUMBER: 33,712
REFERENCE/DOCKET NUMBER: P14
TELECOMMUNICATION INFORMATION:
TELEPHONE: (302) 886-7466
                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
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375 FFVLVIFLGSFYL 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM: rat
TISSUE TYPE: dorsal root ganglia
CELL TYPE: peripheral nerve
SEQUENCE DESCRIPTION: SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: protein HYPOTHETICAL: YES
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Wood, Jonn N.
Akopian, Armen N.
                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1800 Concord Pike, P.O. Box 15437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZENECA Pharmaceuticals
                                                                                                                                                                                       46...
100.0%; PI
                                                                                                                                                                                     46.4%; Score 13; DB 4; Le
100.0%; Pred. No. 0.00012;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Version #1.25
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ZIP: 19850

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Versi
PPLICATION NUMBER: US/08/669,656A
FILLING DATE: 24-JUN-1996
CIASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: Hohenschutz, Liza D.
REGISTRATION NUMBER: 33,712
REFERENCE/DOCKET NUMBER: PHM.70086
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION 1D NO: 6:
                                                                                                                                                                                                                                                                                                                                                                                                PATERIT NO. 6451554

GENERAL INFORMATION:
APPLICANT: Wood, John N.
APPLICANT: Akopian, Armen N.
TITLE OF INVENTION: Ion Channel
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 23
US-08-669-656A-6
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Best Local Similarity lou.
13; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/669,656A
FILING DATE: 24-JUN-1996
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: Hohenschut- 11---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (302) 886-7
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 1957 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Hohenschutz, Liza D. REGISTRATION NUMBER: 33,712 REFERENCE/DOCKET NUMBER: PHM.70086 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                    CITY: Wilmington
STATE: Delaware
                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
ADDRESSEE: ZENECA Pharmaceuticals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: ZENECA Pharmaceuticals STREET: 1800 Concord Pike, P.O. Box 15437 CITY: Wilmington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         375 FFVLVIFLGSFYL 387
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1800 Concord Pike, P.O. Box 15437
                                                                                                                                                                                                                                                                                                                       USA
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5%; Pred. No. 0.00012;
Vismatches 0;
                                                                                                                                                                                                    Version #1.25
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APPLICANT: Unb-Hajj, Sulayman
APPLICANT: Waxman, Stephen G.
TITLE OF INVENTION: Modulation of Sodium Channels in Dorsal Root Ganglia
FILE REFERENCE: 44574-5004-01-US
CURRENT APPLICATION NUMBER: US/99/354,147C
CURRENT FILING DATE: 1999-07-16
PRIOR APPLICATION NUMBER: US 60/072,990
PRIOR APPLICATION NUMBER: US 60/072,990
PRIOR APPLICATION NUMBER: US 60/109,402
PRIOR APPLICATION NUMBER: US 60/109,402
PRIOR APPLICATION NUMBER: US 60/109,402
PRIOR FILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: PCT/US99/02008
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 44
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 7
1.ENGTH: 12733
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; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: Synthetic
; OTHER INFORMATION: Sequence
US-09-562-737-83
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US-09-354-147C-7
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GENERAL INFORMATION:

APPLICANT: Herz, Joachim

APPLICANT: Gotthardt, Michael

APPLICANT: Gotthardt, Michael

APPLICANT: GUTSHO7108

TITLE OF INVENTION: LDL Receptor Signaling Pathways

TITLE OF INVENTION: UTSW0708

TOTHER OF INVENTION: UTSW0708

TOTHER OF INVENTION: US/09/562,737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 42.9%; Score 12; DB 4; L
Best Local Similarity 100.0%; Pred. No. 0.00066;
Matches 12; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILE REFERENCE: UTSW0708
CURRENT APPLICATION NUMBER: US/09/562,737
CURRENT FILING DATE: 2000-05-01
NUMBER OF SEQ ID NOS: 132
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 83
LENGTH: 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 46.4%; Score 13; DB 4; Length 2132; Best Local Similarity 100.0%; Pred. No. 0.00013; Matches 13; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 7, Application US/09354147C Patent No. 6573067 GENERAL INFORMATION:
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Patent No. 6428967
FEATURE:
NAME/KEY: UNSURE
LOCATION: (308)
                                                                    LENGTH: 1233
TYPE: PRT
ORGANISM: Homo sapiens
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LENGTH: 2132 amino acids
TYPE: amino acid
TOPOLOGY: linear
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; OTHER INFORMATION: Xaa is Leu. Xaa results from a "y" in SEQ ID NO: 6. US-09-354-147C-7
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Query Match . 42.9%; Score 12; DB 4; Length 1233; Best Local Similarity 100.0%; Pred. No. 0.00078; Matches 12; Conservative 0; Mismatches 0; Indels 0; Gaps
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Search completed: January 27, 2005, 17:54:17 Job time : 23.5 secs

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The invention relates to a novel method for identifying a subject CC predisposed to a disorder associated with ion channel dysfunction. The CC method comprises ascertaining if at least one of the genes encoding ion CC channel subunits (ICS) has undergone a mutation event so that a CDNA CC of the invention has notropic, neuroprotective, inotropic, antipyretic, CC antiarrhythmic, antimigraine, antidepressant, antiparkinsonian, CC ophthalmological activity. A polynucleotide of the invention acts as an nucleic acids, polypeptides, antibody, selective agonist, antagenist or mucleic acids, polypeptides, antibody, selective agonist, antagenist or animal, are useful for the diagnosis and treatment of epilepsy and/or a disorder associated with ion channel dysfunction, such as hyper or hypothesis, cardiac arrhythmias, misoriant hyperthermia, cardiac arrhythmias, episodic ataxia, migraine, Alzheimer's depression, phobic obsessive symptoms, neuropathic pain, inflammatory cpain, chronic/acute pain, Bartter's syndrome, polycystic kidney disease, fibrosis, congenital stationary night blindness and total colour
                                                                                                                                                                                                                                                                                                                                                                                                   Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
                                                                                                                                                                                                                                                                                                                                                                 Claim 13; SEQ ID NO 140;
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Berkovic SF,
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05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
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RESULT 2
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The invention relates to a novel method for identifying a subject predisposed to a disorder associated with ion channel dysfunction. The method comprises ascertaining if at least one of the genes encoding ion derived from the subject has undergone a mutation event so that a CDNA of the invention has nootropic, neuroprotective, inotropic, antipyretic, neuroleptic, tranquiliser, analgesic, nephrotropic, antidabetic, and ophthalmological activity. A polynucleotide of the invention acts as an nucleic acids, polypeptides, antibody, selective agonist, antagonist or nucleic acids, polypeptides, antibody, selective agonist, antagonist or modulator of an ion channel, cells and genetically modified non-human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
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Best Local
                                                                                                                                                                                                                                                                                                                                                                           Claim 13; SEQ ID NO 141; 106pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                            mutation events.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2003-239332/23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mulley JC,
Berkovic SF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mulley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-JUL-2001; 2001AU-00006452
05-MAR-2002; 200ZAU-00000910
13-MAY-2002; 200ZAU-00002292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (BION-) BIONOMICS LTD. (WALL/) WALLACE R W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy; ion channel dysfunction; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       08-JUL-2002; 2002WO-AU000910
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
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ilarity 100.0%; Pred. No. 6.:
Conservative 0; Mismatches
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6.7e-18;
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Matches
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The invention relates to a recombinantly expressed and isolated human SCNIA (sodium channel type I alpha-subunit) (I). (I), optionally incorporated into a cell, is used to screen for specific modulators, potentially useful as anticonvulsant, antieplieptic, neuroprotective, analgesic and/or anesthetic agents, e.g. for treating severe myoclonic epilepsy of infancy, stroke, cardiac arrest, hyperkalemic paralysis, motor endplate diseases, hypertension, congestive heart failure and muscular dystrophy also to treat cancer (SCNIA is expressed in prostatic and metastatic cancer cell lines). These activities can also be provided by gene therapy vectors that express (I) or the modulators. The modulators, also antibodies directed against (I), are used to detect sodium channel polypeptides. The present sequence represents a human
                                                                                                                                                                                                                                                                                                                                                                              Recombinantly expressed sodium channel type 1 alpha subunit, useful screening for modulators, for treating e.g. epilepsy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 George AL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SCNIA; sodium channel type 1 alpha-subunit; anticonvulsant; analgesic; neuroprotective; anesthetic; cytostatic; cerebroprotective; cardiant;
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                                                                                                                                                                                                                                                                                                                             Disclosure; Page 162-169; 176pp; English.
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Pred. No. 6.9e-18;
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                                                                                                                                                    The invention relates to a recombinantly expressed and isolated human SCNIA (sodium channel type I alpha-subunit) (I). (I), optionally incorporated into a cell, is used to screen for specific modulators, potentially useful as anticonvulsant, antispileptic, neuroprotective, analgesic and/or anesthetic agents, e.g. for treating severe myoclonic epilepsy of infancy, stroke, cardiac arrest, hyperkalenic paralysis, motor endplate diseases, hypertension, congestive heart failure and muscular dystrophy also to treat cancer (SCNIA is expressed in prostatic and metastatic cancer cell lines). These activities can also be provided by gene therapy vectors that express (I) or the modulators. The modulators, also antibodies directed against (I), are used to detect sodium channel polypeptides. The present sequence represents a human SCNIA splice variant 33P:SCNIADELp671-681 encoding cDNA
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                                                                                              Sequence 1998
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Recombinantly expressed sodium channel type 1 alpha subunit, useful in screening for modulators, for treating e.g. epilepsy.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-JAN-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABR83184 standard; protein; 1998 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (UYVA-) UNIV VANDERBILT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28;
   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lossin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                              AA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 28; DB 7
Pred. No. 7.3e-
   Score 28; DB 7;
Pred. No. 7.4e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                     DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1981;
                                 Length 1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
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RESULT 5
ABBO 1026
AI ABBO 6026
AX Huma
AX Huma
AX Huma
AX Huma
AX Homo
AX
     RESULT 6
AAB99676
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Best Local S
Matches 28
                      Human; epilepsy; chromosome 2; SCN1A; SCN2A; SCN3A; identification; diagnosis; mutation; chromosome 2q23-q31; neurological disorder; anticonvulsant; neuroprotective.
Homo sapiens
                                                                                                                                                       Human adult
                                                                                                                                                                                                      04-SEP-2001
                                                                                                                                                                                                                                                          ААВ99676;
                                                                                                                                                                                                                                                                                              AAB99676 standard; protein; 2005 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention describes human sodium channels SCNIA and SCNIA. The present sequence represents the human sodium channel SCNIA. SCNIA and SCNIA have been located to the human chromosome 2 long arm, positions 2024 and 2024-31 respectively. The sodium channel proteins are useful in studying the physiological mechanism in which excitant cells participate and cause human diseases, and in developing remedies for e.g. familial hypercal caemic periodic paralysis of extremities and motor endplate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1999 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; Page 40-49; 88pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human sodium channels SCN1A and SCN3A and encoded genes, useful in studying physiological mechanism in which excitant cells participate causes of diseases and developing drugs for motor endplate disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; ABL39689.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kanazawa I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-JUN-2000; 2000JP-00177540.
13-JUN-2000; 2000JP-00177544.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12-JUN-2001; 2001WO-JP004956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (NISC-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20-DEC-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200196552-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; sodium channel; S familial hypercalcaemic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human sodium channel SCN1A protein SEQ ID NO:2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABB06026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABB06026 standard; protein; 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                          958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2002-098066/13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                1 CLTVFMMVMVIGNLVVLNLFLALLLSSF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                       CLTVFMMVMVIGNLVVLNLFLALLLSSF 985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JAPAN
                                                                                                                              form of SCN2A protein sequence SEQ ID NO:35.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ilarity 100.0%; F
Conservative 0;
                                                                                                                                                                                                (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Goto J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SCI & TECHNOLOGY CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Jeong S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SCN1A; chromosome 2q24;
c periodic paralysis; motor endplate disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 28; DB 5;
Pred. No. 7.4e-18;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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RESULT 7
AAB99677
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Best Local S
Matches 28
              26-NOV-1999;
                                                 24-NOV-2000; 2000WO-CA001404
                                                                                                                                                                                                                                  Human; epilepsy; chromosome 2; SCN1A; SCN2A; SCN3A; identification; diagnosis; mutation; chromosome 2q23-q31; neurological disorder;
                                                                                                                                              WO200138564-A2
                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                    Human neonatal
                                                                                                                                                                                                                                                                                                                                                                 04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB99677 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              individual's predicting the individual's response to medication. The method SCNIA, seek determining the genetype of at least one gene selected from shows a linkage disequilibrium. SCNIA, SCNIA or SCNIA, or a DNA variant, equivalent, or mutation which channel genes located on Chromosome 2. The idiopathic generalised q31. Compounds identified as modulators of the biological activity of or other neurological disorders or genes, are useful for treating epilepsy neuroprotective activities. AAH55763 to AAH56164 and AAB99674 to AAB99679 oligonucleotides and proteins given in the exemplification of the present scnia, SCNIA, and SCNIA, compounds identified as modulators of the biological activity of or other neurological disorders They have anticonvulsant and represent SCNIA, SCNIA, and SCNIA, CDNIA, SCNIA, and SCNIA, CDNIA, SCNIA, and SCNIA, CDNIA, SCNIA, SCNIA, SCNIA, and SCNIA, CDNIA, SCNIA, SCNIA, SCNIA, SCNIA, and SCNIA, CDNIA, SCNIA, 
                                                                                                                                                                                                                                                                                                                                                                                                             AAB99677;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2005 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention describes a method (M1) of determining an individual's predisposition to epilepsy and/or development of epilepsy, and/or development of epilepsy,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Page 123-130; 268pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Determining a predisposition to epilepsy and/or development of epilepsy comprises determining the genotype of SCNIA, SCN2A and/or SCN3A, or a DNA variant, equivalent, or mutation which shows a linkage disequilibrium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB; AAH55793.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rouleau GA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24-NOV-2000; 2000WO-CA001404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (UYMC-) UNIV MCGILL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31-MAY-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200138564-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     959 CLTVFMMVMVIGNLVVLNLFLALLLSSF 986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001-355945/37.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 CLTVFMMVMVIGNLVVLNLFLALLLSSF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                            (first
           99US-0167623P
                                                                                                                                                                                                                                                                                                 form of SCN2A protein sequence SEQ ID NO:36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lafreniere RG,
                                                                                                                                                                                                                           neuroprotective
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-0167623P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; St.
100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                          entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                              2005 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 28;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rochefort D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7.4e-18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cossette P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2005;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ragsdale D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
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RESULT 8
ABB83627
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention describes a method (MI) of determining an condition to epilepsy and/or development of epilepsy, cc individual's predisposition to epilepsy and/or development of epilepsy, cc as well as predicting the individual's response to medication. The method cc comprises determining the genotype of at least one gene selected from cc controls a linkage disequilibrium. SCN1a, SCN2a and SCN3a are all sodium cc channel genes located on chromosome 2. The idiopathic generalised cc epilepsy (IGE) gene is more specifically localised on chromosome 223-cc q31. Compounds identified as modulators of the biological activity of cc SCN1A, SCN2A or SCN3A proteins or genes, are useful for treating epilepsy cr other neurological disorders. They have anticonvulsant and cc represent SCN1A, SCN2A, and SCN3A cDNAs, gene fragments, PCR primers, cc oligonucleotides and proteins given in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Determining a predisposition to epilepsy and/or development of epilepsy comprises determining the genotype of SCN1A, SCN2A and/or SCN3A, or a DNA variant, equivalent, or mutation which shows a linkage disequilibrium.
                        A human polynucleotide which is complementary to an mRNA transcribed from a generalized epilepsy with febrile seizure plus (GEFS+)-related gene
                                                                                                                                                    01-NOV-2000;
                                                                                                                                                                                01-NOV-2000; 2000JP-00334969
                                                                                                                                                                                                                                     JP2002136289-A.
                                                                                                                                                                                                                                                                                           generalized
                                                                                                                                                                                                                                                                                                         Human;
                                                                                                                                                                                                                                                                                                                                     Human GEFS+
                                                                                                                                                                                                                                                                                                                                                                                                                    ABB83627 standard; protein; 2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2005 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Page 131-138; 268pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI;
                                                                                  WPI;
                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                10-OCT-2002
                                                                                                             (RIKA
                                                                                                                         (KAGA-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITABLE TOTAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (UYMC-)
                                                                 2002-552308/59.
DB; ABQ79201.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           959
                                                                                                                                                                                                                                                                                           GEFS+; SCN2A;
lized epilepsy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       μ
                                                                                                           KAGAKU GIJUTSU SHINKO
RIKAGAKU KENKYUSHO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  UNIV MCGILL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLTVEMMVMVIGNLVVLNLFLALLLSSF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; ilarity 100.0%; Conservative 0
                                                                                                                                                                                                                                                                                                                                   protein with SCN2A mutation
                                                                                                                                                   2000JP-00334969
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                                                                                                                                                                                                                                                                                                                                                               (first
                                                                                                                                                                                                                                                                                                                                                                entry)
                                                                                                                                                                                                                                                                                         mutant; mutein; with febrile seizure plus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ଞ୍ଚ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 28; DB 4;
Pred. No. 7.4e-1
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rochefort
                                                                                                                         JIGYODAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
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اھ؛
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2005;
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useful

for

diagnosing

GEFS+

The invention relates to a novel method for identifying a subject predisposed to a disorder associated with ion channel dysfunction. The method comprises ascertaining if at least one of the genes encoding channel subunits (ICS) has undergone a mutation event so that a cDNA derived from the subject has any of 134 nucleotide sequences. The method the invention has nootropic, neuroprotective, inotropic, antipyrel antiarrhythmic, antimigraine, antidepressant, antiparkinsonian, neuroleptic, tranquillser, analgesic, nephrotropic, antidiabetic, anophthalmological activity. A polynucleotide of the invention acts as

antipyretic,

an

a cDNA The method

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Claim 13; SEQ ID NO 148; 106pp; English

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RESULT 9
ADB78604
ADB78604
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AC ADB7
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Best Local
                                                                                                                                                                                                                                                                                                                                    Identifying predisposition to an ion channel dysfunction, such periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's schizophrenia, anxiety and depression, by detecting encoding-ge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-JUL-2001; 2001AU-00006452.
05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mutein; mutant; ion channel; ion channel subunit; ICS; nootropic; neuroprotective; inotropic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to an mRNA transcribed from plus" (GEFS+)-related gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 10; Page 29-34; 37pp; Japanese
                                                                                                                                                                                                                                                                                                               mutation events.
                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB; ADB78643.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mulley JC, 1
Berkovic SF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    08-JUL-2002; 2002WO-AU000910
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human sodium channel subunit mutant SEQ ID
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       present sequence represents
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADB78604 standard; protein; 2005 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (WALL/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (BION-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 CLTVFMMVMVIGNLVVLNLFLALLLSSF 28
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Harkin LA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           dysfunction; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scheffer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
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a "generalized epilepsy with febrile seizur
The gene is useful for diagnosing GEFS+. The
the human GEFS+ protein sequence with SCN2A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 28; DB 5;
Pred. No. 7.4e-18;
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                                                                                                                                                                                                                                                                                                                                          encoding-gene
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                                                                                                                                                                                                                                                                                                                                                                  disease,
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RESULT 10
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Best Local S
Matches 28
       Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
                                                                                                                                    WPI; 2003-239332/23.
                                                                                                                                                                                 Mulley JC, |
Berkovic SF,
                                                                                                                                                                                                                                                                                                                     18-JUL-2001; 2001AU-00006452
05-MAR-2002; 2002AU-00000910
13-MAY-2002; 2002AU-00002292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mutein; mutant; ion channel; ion channel subunit; ICS; nootropic; neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy;
                                                                                                                                                                                                                                                                                                                                                                                                                08-JUL-2002; 2002WO-AU000910.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human sodium channel subunit mutant SEQ ID NO:147
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                                                                                                                                                                                                                                                     (WALL/) WALLACE R W.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               channel dysfunction; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens.
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                                                                                                                 ADB78642.
events.
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                                                                                                                                                                                   Harkin LA, Dibbens, Scheffer IE;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein;
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100.0%; Pred. No. 7.4e-18;
n: Mismatches 0;
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                                                                                                                                                                                                    ĽM,
                                                                                                                                                                                                  Phillips
                                                                                                                                                                                                  HA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 2005;
                                                                                                                                                                                                  Heron
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밁 Ś

Claim 13; SEQ ID NO 147; 106pp; English

WPI; 2003-239332/23

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ADB78605
ID ADB78605
XX ADB7
XX AC ADB7
XX Humat
XX M mutt
KW mepi
KW nepi
KW nepi
KW ion
XX Syn
OS Syn
OS Syn
OS Syn
OS Hom
XX 
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CC The invention relates to a novel method for identifying a subject CC predisposed to a disorder associated with ion channel dysfunction. The CC method comprises ascertaining if at least one of the genes encoding ion channel subunits (ICS) has undergone a mutation event so that a cDNA CC derived from the subject has any of 134 nucleotide sequences. The method cof the invention has nootropic, neuroprotective, inotropic, antipyretic, creativety, thing, antidgraine, antidepressant, antiparkinsonian, complication acts as an ion channel agonist, or ion channel antagonist. The methods, isolated complicated acids, polypeptides, antibody, selective agonist, antagonist or complicated with ion channel antagonist. The methods, isolated complicated acids are polypeptides, antibody, selective agonist, antagonist or channel, cells and genetically modified non-human complicated with ion channel dysfunction, such as hyperore or hypocatemic periodic paralysis, myctonias, malignant hyperthermia, crimity, arrivals, arrivhthmias, episodic attaxia, migraine, Alzheimer's compensation, phobic obsessive symptoms, neuropathic pain, inflammatory pain, chronic/acute pain, Bartter's syndrome, polycystic kidney disease, fibrosis, congenital stationary night blindness and total colour colours, condenses. The present sequence represents a mutant protein of the colours of the sequence data for this patent is not represented in the printed specification, but was obtained in electronic format directly axia.
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Best Local
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                                                         Mulley JC, Berkovic SF,
                                                                                                                                                                                                                                       18-JUL-2001; 2001AU-00006452.
05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
                                                                                                                                                                                                                                                                                                                                                           08-JUL-2002; 2002WO-AU000910
                                                                                                                                                   (BION-)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mutein; mutant; ion channel; ion channel subunit; ICS; nootropic; neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO2003008574-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human sodium channel subunit mutant SEQ ID NO:149.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            channel dysfunction;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sapiens.
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                                                                                                                                                BIONOMICS LTD. WALLACE R W.
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                                                         Harkin LA,
Scheffer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
                                                                                      Dibbens LM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 28; DB
Pred. No. 7.4
0; Mismatches
                                                                                   Phillips HA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 7;
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                                                                                   Heron SE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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RESULT 12
ADC46947
ID ADC46
XX ADC46
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cc predisposed to a disorder associated with ion channel dysfunction. The cmethod comprises ascertaining if at least one of the genes encoding ion channel subunits (ICS) has undergone a mutation event so that a cDNA cc derived from the subject has any of 134 nucleotide sequences. The method of the invention has mootropic, neuroprotective, inotropic, antipyretic, antiarrhythmic, antimigraine, antidepressant, antiparkinsonian, continually antipyretic, and cophthalmological activity. A polynucleotide of the invention acts as an control on channel agonist, or ion channel antagonist. The methods, isolated nucleic acids, polypeptides, antibody, selective agonist, antagonist or modulator of an ion channel, cells and genetically modified non-human cc mimal, are useful for the diagnosis and treatment of epilepsy and/or a disorder associated with ion channel dysfunction, such as hyper- or hypockalemical periodic paralysis, myotonias, malignant hyperthermia, cardiac arrhythmias, episodic ataxia, migraine, Alzheimer's cdisease, Parkinson's disease, schizophrenia, hyperkplexia, anxiety, cc depression, phobic obsessive symptoms, neuropathic pain, inflammatory cantor of disease, hyperinsulinaemic hypoglycaemia of infancy, cystic cont's disease, hyperinsulinaemic hypoglycaemia of infancy, cystic cont's disease, hyperinsulinaemic hypoglycaemia of total colour control of the present sequence represents a mutant protein of the invention. The sequence data for this patent is not represented in the control of the con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
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Best Local S
Matches 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SCN2A; voltage-gated ion channel; human; neuroprotective; gene therapy; vaccine; Alzheimer's disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
                                                                                                                                                                                                                                                                                                                                                                                                       WO2003060525-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 13; SEQ ID NO 149; 106pp; English
Hipfel R,
                                                                                                                                                                                                                                                      16-JAN-2003; 2003WO-EP000400
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                                                                        (EVOT-) EVOTEC NEUROSCIENCES
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SCN2A amino
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llarity 100.0%;
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2002US-0348674P.
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Der Kammer H,
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                                                                           GMBH
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Pred. No. 7.4e-18;
; Mismatches 0;
   Pohlner J;
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RESULT 13
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ID AAB99674
ID AAB99674
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Best Local
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N-PSDB;
                                                                                                                                                                                                                     Determining a predisposition to epilepsy and/or development of epilepsy comprises determining the genotype of SCN1A, SCN2A and/or SCN3A, or a DI variant, equivalent, or mutation which shows a linkage disequilibrium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Diagnosing or prognosticating a neurodegenerative disease by detecting the level or activity of transcription or translation products of the gene coding for the voltage-gated ion channel SCN2A.
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                                                                                                                                                                 Disclosure;
                                                                                                                                                                                                                                                                                                                                      N-PSDB;
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                                                                                                                                                                                                                                                                                                                                                                                                                       Rouleau GA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UYMC-) UNIV MCGILL.
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DB; AAH55763.
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28; Conserv
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                                                                                                                                                                 Page
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                                                                                                                                                                                                                                                                                                                                                                                                                       Lafreniere
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               neuroprotective.
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f
                                                                                                                                                                    96-104; 268pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SCN1A protein sequence SEQ ID NO:3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 28; DB 7;
Pred. No. 7.4e-18;
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The present invention describes a method (M1) of determining an individual's predisposition to epilepsy and/or development of epilepsy as well as predicting the individual's response to medication. The met comprises determining the genotype of at least one gene selected from SCN1A, SCN2A or SCN3A, or a DNA variant, equivalent, or mutation which

of epilepsy,

method

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Best Local S
Matches 28
                                                                                                                                                                                             New nucleic acid encoding mutant alpha subunit of a mammalian voltage-
gated sodium channel, useful for diagnosis of epilepsy, particularly
generalized epilepsy with febrile seizures plus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   generalised epilepsy with febrile seizures plus; myasthenia; sodium channel dysfunction; malignant hyperthermia; neuropathic pain; inflammatory pain; Alzheimer's disease; Parkinson's disease; myotonia; schizophrenia; hyperekplexia; anticonvulsant; analgesic; neuroprotective; nootropic; anti-Parkinsonian; neuroleptic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    shows a linkage disequilibrium. SCN1a, SCN2A and SCN3A are all sodium channel genes located on chromosome 2. The idiopathic generalised epilepsy (IGE) gene is more specifically localised on chromosome 2g33-g31. Compounds identified as modulators of the biological activity of SCN1A, SCN2A or SCN3A proteins or genes, are useful for treating epilepsy or other neurological disorders. They have anticonvulsant and neuroprotective activities. AAH55763 to AAH56164 and AAB99679 to activities. AAH55763 to AAH56164 and AB99679 to Porcesent SCN1A, SCN2A, and SCN3A CDNAs, gene fragments, PCR primers, oligonucleotides and proteins given in the exemplification of the present
                                                                                                                                                                                                                                                                                                                                          20-DEC-2000; 2000AU-00002203
                                                                                                                                                                                                                                                                                                                                                                  20-DEC-2001; 2001WO-AU001648.
                                                                                                                                                                                                                                                                                                                                                                                               27-JUN-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                         WO200250096-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human sodium channel alpha 1-subunit (SCNA1) variant protein #4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-OCT-2002
                                                                                                                                                                                                                                                                                                                  (BION-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABG69292 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2009 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sodium channel alpha 1-subunit; SCN1A; episodic ataxia; epilepsy;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein; 2009
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The invention relates to a nucleic acid molecule encoding a mutant alpha subunit of a mammalian voltage-gated sodium channel. The DNA and the polypeptide may be used in the diagnosis of epilepsy, in particular generalised epilepsy with febrile seizures plus, and other disorders associated with sodium channel dysfunction. The polypeptide is useful for the screening of candidate pharmaceutical agents, where high throughput screening techniques are employed. The sequences are also useful in the manufacture of a medicament for the treatment of a disorder associated with sodium channel dysfunction such as epilepsy, particularly generalised epilepsy with febrile seizures plus, malignant hyperthermia, myasthenia, episodic ataxia, neuropathic and infiammatory pain, alzheimer's disease, Parkinson's disease, schizophrenia, hyperekplexia

Query Match Best Local Similarity

100

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Score Pred.

28; No.

DB 5; 7.5e-18;

Length 2009;

Sequence 2009 AA;

Page 147-157; 198pp; English.

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RESULT 15
ABG69291
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Best Local S
Matches 28
                                                                The invention relates to a nucleic acid molecule encoding a mutant alpha subunit of a mammalian voltage-gated sodium channel. The DNA and the polypeptide may be used in the diagnosis of epilepsy, in particular generalised epilepsy with febrile seizures plus, and other disorders associated with sodium channel dysfunction. The polypeptide is useful for the screening of candidate pharmaceutical agents, where high throughput screening techniques are employed. The sequences are also useful in the manufacture of a medicament for the treatment of a disorder associated with sodium channel dysfunction such as epilepsy, marticularly generalised epilepsy with febrile seizures plus, malignant hyperthermia, myasthenia, episodic ataxia, neuropathic and inflammatory pain, mlzheimer's disease, Parkinson's disease, schizophrenia, hyperekplexia and myotonias. Sequences ABG69289-ABG69293 represent human sodium channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New nucleic acid encoding mutant alpha subunit of a mammalian voltage-gated sodium channel, useful for diagnosis of epilepsy, particularly generalized epilepsy with febrile seizures plus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 47; Page 107-117; 198pp; English.
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nootropic; anti-Parkinsonian; neuroleptic.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sodium channel alpha 1-subunit;
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                                                             (SCN1A)
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                                                          polypeptides of
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Pred.
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                                                          the invention
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RESULT 16
ABG69293
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Matches 28
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                                                                                                                                                            The invention relates to a nucleic acid molecule encoding a mutant alpha subunit of a mammalian voltage-gated sodium channel. The DNA and the polypeptide may be used in the diagnosis of epilepsy, in particular generalised epilepsy with febrile seizures plus, and other disorders associated with sodium channel dysfunction. The polypeptide is useful for the screening of candidate pharmaceutical agents, where high throughput screening techniques are employed. The sequences are also useful in the manufacture of a medicament for the treatment of a disorder associated with sodium channel dysfunction such as epilepsy, particularly generalised epilepsy with febrile seizures plus, malignant hyperthermia, myasthenia, episodic ataxia, neuropathic and inflammatory pain, Alzheimer's disease, Parkinson's disease, schizophrenia, hyperekplexia and myotonias. Sequences ABG59289-ABG69293 represent human sodium channel alpha 1-subunit (SCNIA) polypeptides of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New nucleic acid encoding mutant alpha subunit of a mammalian voltage-
gated sodium channel, useful for diagnosis of epilepsy, particularly
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                                                                                                                                  Sequence 2009 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                            Claim
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nootropic; anti-Parkinsonian; neuroleptic.
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                                                                                                                                                                                                                                                                                                                                                                                                                            53; Page 167-176; 198pp; English.
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                            1 CLTVFMMVMVIGNLVVLNLFLALLLSSF 28
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                                                                                 Similarity
CLTVFMMVMVIGNLVVLNLFLALLLSSF 995
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                                                             Score 28; DB 5; Le
Pred. No. 7.5e-18;
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RESULT 17

21-OCT-2002 ABG69290; ABG69290

(first entry)

standard; protein; 2009

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ABG69290
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gated sodium channel, useful for diagnosis of epilepsy, particularly
generalized epilepsy with febrile seizures plus.
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ilarity 100.0%;
Conservative 0
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Pred. No.
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Best Local S
Matches 28
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                                              Human; GEFS+; SCN1A; mutant; mutein; generalized epilepsy with febrile se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New nucleic acid encoding mutant alpha subunit of a mammalian voltage-
gated sodium channel, useful for diagnosis of epilepsy, particularly
generalized epilepsy with febrile seizures plus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             generalised epilepsy with febrile seizures plus; myasthenia; sodium channel dysfunction; malignant hyperthermia; neuropathic pain; inflammatory pain; Alzheimer's disease; parkinson's disease; myotonia; schizophrenia; hyperekplexia; anticonvulsant; analgesic; neuroprotecti
                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; sodium channel alpha 1-subunit; SCN1A; generalised epilepsy with febrile seizures plu
                 Homo sapiens
                                                                                                                                10-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20-DEC-2001; 2001WO-AU001648
                                                                                                                                                                                               ABB83626 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BION-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20-DEC-2000; 2000AU-00002203
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nootropic; anti-Parkinsonian; neuroleptic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2002-528445/56.
                                                                                                                                                                                                                                                                               896
                                                                                               GEFS+ protein with SCN1A mutation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sodium channel alpha 1-subunit (SCNA1) variant protein
                                                                                                                                                                                                                                                                                                                                               Similarity 28; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BIONOMICS
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                                                                                                                                                                                                                                                                                               CLTVFMMVMVIGNLVVLNLFLALLLSSF 28
                                                                                                                                                                                                                                                                                                                                                                                                              2009 AA;
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                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mulley JC,
                                                                                                                                (first
                                                                                                                                entry)
                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Berkovic
                                                                                                                                                                                                 2009
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                                                                                                                                                                                                                                                                                                                                                              Score 28;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SF;
                                                                                                                                                                                                                                                                                                                                                                7.5e-18;
                                                                                                                                                                                                                                                                                                                                                                             DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             analgesic; neuroprotective;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            episodic ataxia;
                                                                                                                                                                                                                                                                                                                                                                            Length 2009;
                                                                                                                                                                                                                                                                                                                                               0,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              epilepsy;
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AAE16776
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AC AAE1
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Huma
KW Huma
KW Anti:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; transporter and ion channel-13; TRICH-13; neuroprotective; asthma; nootropic; cytostatic; cardiovascular; immunosuppressive; cardiomyopathy; antiinflammatory, protein therapy; akinesia; cystic fibrosis; leukaemia; Bell's palsy; amyotrophic lateral sclerosis; Alzheimer's disease; cancer; amnesia; dementia; myocarditis; Duchenne's muscular dystrophy; AIDS; Acquired Immune Deficiency Syndrome; Addison's disease; allergy; angina; cell proliferative disorder; psoriasis; cardiac disease; hypertension;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This invention relates to a human polynucleotide which is complementary to an mRNA transcribed from a "generalized epilepsy with febrile seizure plus" (GEFS+)-related gene. The gene is useful for diagnosing GEFS+. The present sequence represents the human GEFS+ protein sequence with SCNIA
                                                                                                                                                                                                                   Domain
                                                                                                                                                                                                                                                                                                                                                                                              Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human transporter and ion channel-13 (TRICH-13) protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-NOV-2000; 2000JP-00334969
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RIKAGAKU KENKYUSHO.
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                                                                                     /label=
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                                                                                                                                                                                                                                                                                                                                                      Label=
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"Ion transport protein domain"
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Pred. No. 7.5e-18;
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26-MAY-2000;
01-JUN-2000;
08-JUN-2000;
16-JUN-2000;
       The invention relates to human transporters and ion channels (TRICH) polypeptides and their cDNA molecules. The nucleic acid and polypeptide sequences are useful in the diagnosis, treatment, and prevention of disorders associated with transport (akinesia, cystic fibrosis, Bell's palsy, amyotrophic lateral sclerosis); neurological (Alzheimer's disease.
                                                                                                                                                                      Lee EA
                                                                                                                                                                                        Tribouley (
                                                                                                                                                                                                                                                                                                                                                                                               Binding
                                                                                       expression of
                                                                   Claim 1; Page 158-162;
                                                                                                                                                                                                             Thornton
                                                                                                                                                                                                                                                     29-JUN-2000;
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                                                                                      human transporters a gnosing, treating or ression of TRICH.
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                                                                                                                                      2002-122055/16.
                                                                                                                                                 M, Hillman JL;
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                                                                                                                                                                      Hafalia A, I
S, Seilhamer
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                                                                                                                                                                                                                                                   ; 2000US-0208424P.
; 2000US-0209001P.
; 2000US-021058BP.
; 2000US-0212335P.
; 2000US-0213747P.
; 2000US-0215391P.
                                                                                                                                                                                         Bruns
                                                                                                                                                                   Walia NK, Yue H, Nguyen DB, Lai P, Gandhi AR;

, Yao MG, Ramkumar J, Au-Young J. Y, Tang Y

Bruns CM, Griffin JA, Yang J, Sanjanwala MS, RR

alia A, Baughn MR, Green BD, Khan FA, Kearney J

Seilhamer JJ, Policky JL, Borowsky ML, Burford J
                                                                                                                                                                                                                                                                                                                           2001WO-US017065
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1916. .1
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1537. .1785
/note= "Ion 1
1543. .1562
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/label= Tran
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/label= Transmembrane_domain
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                                                                                               and ion channels (TRICH) polypeptides useful for preventing disorders associated with aberrant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "ATP/GTP binding
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MS, Raumann BE;
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RESULT 21
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Best Local S
Matches 28
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                                                                                                               Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's dischizophrenia, anxiety and depression, by detecting encoding-gene
                                                                                                                                                                                                                                                                                                                                                                                         Homo
                                                                                                     mutation
                                                                                                                                                             N-PSDB;
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                                                                                                                                                                                                                                   (BION-)
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05-MAR-2002;
                                                                                                                                                                                                                                                                                                                  08-JUL-2002;
                                                                                                                                                                                                                                                                                                                                                                                                   Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                          neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy; ton channel dysfunction; human.
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                                                                                                                                                                                                                                                                                                                                           30-JAN-2003
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                                                                                                                                                                                                                                  BIONOMICS
WALLACE R
                                                                                                                                                               ADB78638.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mutant; ion channel; ion channel subunit; ICS; nootropic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                     events.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     standard; protein;
                                                                                                                                                                                                             Harkin LA,
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                                                                                                                                                                                                                                                                    2001AU-00006452.
2002AU-00000910.
2002AU-00002292.
                                                                                                                                                                                                                                                                                                                  2002WO-AU000910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                channel subunit mutant
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                                                                                                                                                                                                 Scheffer
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                                                                                                                                                                                                 IE;
                                                                                                                                                                                                            Dibbens LM,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 28; DE Pred. No. 7.50; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ
                                                                                                                                                                                                             Phillips HA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28
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7.5e-1
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                                                                                                                            disease,
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The invention relates to a novel method for identifying a subject predisposed to a disorder associated with ion channel dysfunction. T method comprises ascertaining if at least one of the genes encoding channel subunits (ICS) has undergone a mutation event so that a cDNA derived from the subject has any of 134 nucleotide sequences. The me of the invention has nootropic, neuroprotective, inotropic, antipyre

antipyretic,

. The method

CDNA

The not

Claim

13; SEQ

ij

NO 143; 106pp;

English

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RESULT 22
ADB78595
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antiarrhythmic, antimigraine, antidepressant, antiparkinsonian, concerning the computational control of the invention acts as an includence control of the invention acts as an includence acids, polypeptides, antibody, selective agonist, antagonist or mucleic acids, polypeptides, antibody, selective agonist, antagonist or modulator of an ion channel, cells and genetically modified non-human commandation are useful for the diagnosis and treatment of epilepsy and/or a disorder associated with ion channel dysfunction, such as hyper or hypocomy as the priodic paralysis, myotonias, malignant hyperthermia, cardiac arrhythmias, episodic ataxia, migraine, Alzheimer's depression, phobic obsessive symptoms, neuropathic pain, inflammatory pain, chronic/acute pain, Bartter's syndrome, polycystic kidney disease, parkiness, hyperinsullinaemic hypoglycaemia of infancy, cystic compenital stationary night blindness and total colour blindness. The present sequence represents a mutant protein of the convention. The sequence data for this patent is not represented in the convention, but was obtained in electronic format directly axx
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Best Local 9
Identifying predisposition to an ion channel dysfunction, such periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's schizophrenia, anxiety and depression, by detecting encoding-ge mutation events.
                                                                                         WPI; 2003-239332/23.
                                                                                                                                       Mulley JC,
                                                                                                                                                                                                             18-JUL-2001; 2001AU-00006452.
05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
                                                                                                                                                                                                                                                                                                                                                                                                                        mutein; mutant; ion channel; ion channel subunit; ICS; nootropic; neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy;
                                                                                                                                                                                                                                                                           08-JUL-2002; 2002WO-AU000910
                                                                                                                                                                                                                                                                                                                                         WO2003008574-A1
                                                                                                                                                                                                                                                                                                                                                                                         Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human sodium channel subunit mutant SEQ ID NO:139.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            04-DEC-2003
                                                                                                                                                                    (WALL/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADB78595
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                                                                                                                                                                                      (BION-)
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                                                                                                                                                                                                                                                                                                                                                                                                                  channel dysfunction; human.
                                                                                                                                                                                                                                                                                                                                                                      sapiens.
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                                                                                                                                                                 BIONOMICS LTD. WALLACE R W.
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                                                                                                                      SF,
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                                                                                                                      Scheffer IE;
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                                                                                                                                   Dibbens
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Pred. No. 7.5e-18;
; Mismatches 0;
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                                                                                                                                Phillips
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                                                                                                                                Heron
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disease,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
     Mulley JC,
                                                                              18-JUL-2001; 2001AU-00006452
05-MAR-2002; 2002AU-00000910
13-MAY-2002; 2002AU-00002292
                                                                                                                                             08-JUL-2002; 2002WO-AU000910.
                                                                                                                                                                                  30-JAN-2003.
                                                                                                                                                                                                                                                                 Synthetic
                                                                                                                                                                                                                                                                                                      neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy;
                                                                                                                                                                                                                 WO2003008574-A1
                                                                                                                                                                                                                                                                                                                                                        mutein; mutant; ion channel; ion channel subunit; ICS; nootropic;
                                  (BION-) BIONOMICS (WALL/) WALLACE R
                                                                                                                                                                                                                                                   Homo
                                                                                                                                                                                                                                                                                                                                                                                          Human sodium channel subunit mutant SEQ ID NO:137.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADB78593 standard; protein; 2009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2009 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                              sapiens.
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   Harkin LA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
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100.0%; P;
1tive 0;
   Dibbens LM,
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Pred. No. 7.5e-18;
; Mismatches 0;
Phillips
 Ψ,
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RESULT 24
ADB78594
ID ADB78
XX ADB78
XX ADB78
XX ADB78
DT 04-DE
XX mutei
CE Human
XX mutei
KW neurc
KW antic
KW antic
KW ion c
XX Synth
OS Synth
OS Homo
XX WO200
PN WO200
PF 08-JU
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cc predisposed to a disorder associated with ion channel dysfunction. The method comprises ascertaining if at least one of the genes encoding ion channel subunits (ICS) has undergone a mutation event so that a cDNA cc derived from the subject has any of 134 nucleotide sequences. The method cc antiarrhythmic, antimigraine, antidepressant, antiparkinsonian, cc neuroleptic, tranquiliser, analgesic, nephrotropic, antidabetic, and cophthalmological activity. A polynucleotide of the invention acts as an ci on channel agonist, or ion channel antagonist. The methods, isolated concleic acides, polypeptides, antibody, selective agonist, antagonist or modulator of an ion channel, cells and genetically modified non-human act disorder associated with ion channel dysfunction, such as hyper- or hypock alemic periodic paralysis, myotonias, malignant hyperthermia, cardiac arrhythmias, episodic ataxia, migraine, Alzheimer's cdisease, Parkinson's disease, schizophrenia, hyperthermia, anxiety, cc depression, phobic obsessive symptoms, neuropathic pain, inflammatory cannot be present sequence represents a mutant protein of the invention. The sequence data for this patent protein of the christication, but was obtained in electronic format directly crinted specification, but was obtained in electronic format directly.
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Best Local (
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                                                                                                                                                                                           mutein; mutant; ion channel; ion channel subunit; ICS; nootropic; neuroprotective; inotropic; antipyretal; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquillser; analgesic nephrotropic; antidiabetic; ophthalmological; epilepsy;
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                                                                                                                                                                                                                                                                                          Human sodium channel subunit mutant SEQ ID NO:138.
08-JUL-2002; 2002WO-AU000910.
                                        30-JAN-2003.
                                                                                                                                         Synthetic.
                                                                                                                                                                                                                                                                                                                                   04-DEC-2003
                                                                                                                                                                                                                                                                                                                                                                                                             ADB78594 standard; protein; 2009 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2009 AA;
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                                                                            WO2003008574-A1
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                                                                                                                                                                           channel dysfunction; human.
                                                                                                                   sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    red specification, but was obtained in electronic format directly
WIPO at ftp.wipo.int/pub/published_pat_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 CLTVFMWVMVIGNLVVLNLFLALLLSSF 28
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLTVFMMVMVIGNLVVLNLFLALLLSSF 995
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                relates to a novel method for identifying a subject
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>,</u>
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Pred. No. 7.5e-18;
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The invention relates to a novel method for identifying a subject CC predisposed to a disorder associated with ion channel dysfunction. The CC method comprises ascertaining if at least one of the genes encoding ion CC channel subunits (ICS) has undergone a mutation event so that a cDNA CC derived from the subject has any of 134 nucleotide sequences. The method CC of the invention has nootropic, neuroprotective, inotropic, antipyretic, CC antiarrhythmic, antimigraine, antidepressant, antiparkinsonian, CC encuroleptic, tranquiliser, analgesic, nephrotropic, antidiabetic, and CC ophthalmological activity. A polynucleotide of the invention acts as an CC in channel agonist, or ion channel antagonist. The methods, isolated CC mucleic acids, polypeptides, antibody, selective agonist, antagonist or CC modulator of an ion channel, cells and genetically modified non-human CC alimal, are useful for the diagnosis and treatment of epilepsy and/or a disorder associated with ion channel dysfunction, such as hyper- or hypock kalemic periodic paralysis, myotonias, malignant hyperthermia, cCC myasthenia, cardiac arrhythmias, episodic attaxia, migraine, Alzheimer's CC disease, Parkinson's disease, schizophrenia, hyperkplexia, anxiety, CC depression, phobic obsessive symptoms, neuropathic pain, inflammatory pain, chronic/acute pain, Bartter's syndrome, polycystic kidney disease, pent's disease, hyperinsulinaemic hypoglycaemia of infancy, cystic convention. The present sequence represents a mutant protein of the invention. The sequence data for this patent is not represented in the printed specification, but was obtained in electronic format directly ccc from MIPO at tfo. Int/nub/nub/shel nat securence
                                                                                   Matches
                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mulley JC, Ha
                                                                                 Sequence 2009 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
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05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BION-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 13; SEQ ID NO 138; 106pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mutation events.
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  28;
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                                                                                                                      at ftp.wipo.int/pub/published_pat_sequences
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Scheffer
  Conservative
                   100.0%;
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0;
                   Score 28;
Pred. No.
  Mismatches
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                         7
                     DB 7;
7.5e-1
    <u>.</u>.
                                        Length 2009;
  Indels
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Gaps
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 896
               1 CLTVFMMVMVIGNLVVLNLFLALLLSSF 28
 CLIVEMMVMVIGNLVVLNLFLALLLSSF 995
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ADB78598 standard; protein; 2009
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Human sodium channel subunit mutant SEQ ID NO:142

04-DEC-2003

(first entry)

RESULT 25
ADB78598
ID ADB78
XX
AC ADB78
XX
AC ADB78
XX
DT 04-DE
XX
Human
XX
mutei
XW meurc
XW nephr
XW ancid
XW nephr neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy; ion channel dysfunction; human. mutein; mutant; ion channel; ion channel subunit; ICS; nootropic;

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                                                                                                                                                              The invention relates to a novel method for identifying a subject CC predisposed to a disorder associated with ion channel dysfunction. The CC method comprises ascertaining if at least one of the genes encoding ion channel submitts (ICS) has undergone a mutation event so that a cDNA CC derived from the subject has any of 134 nucleotide sequences. The method contribution has nootropic, neuroprotective, inotropic, antipyretic, contribution, antimigratine, antidepressant, antiparkinsonian, contribution, and contribution acts and contribution agonist, or ion channel antagonist. The methods, isolated contributed agonist, or ion channel antagonist. The methods, isolated contributed activity. A polynucleotide of the invention acts as an nucleic acids, polypeptides, antibody, selective agonist, antagonist or mucleic acids, polypeptides, antibody, selective agonist, antagonist or animal, are useful for the diagnosis and treatment of epilepsy and/or a contribution of an ion channel dysfunction, such as hyper- or hypotalemia, are useful for the diagnosis and treatment of epilepsy and/or a contribution arrhythmias, episodic ataxia, migraine, Alzheimer's disease, Parkinson's disease, schizophrenia, hyperthermia, anxiety, contributed sparalysis, myotonias, meuropathic pain, inflammatory pain, chronic/acute pain, Bartter's syndrome, polycystic kidney disease, pain, chronic/acute pain, Bartter's syndrome, polycystic kidney disease, congenital stationary night blindness and total colour contributed specification, but was obtained in electronic format directly xxx
                                                                             Query Match
Best Local S
Matches 28
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                                                                                                                                             Sequence 2009 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 13; SEQ ID NO 142; 106pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mutation events.
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05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
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hypothetical prote sodium channel pro TWF receptor assoc proteinase IV (EC voltage-gated sodium channel N-de fibrinogen-binding probable membrane NADH2 dehydrogenas platelet factor 4 hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote probable exported F1003.11 protain probable exported protable transmemb conserved hypothet internalin like proportable conserved hypothet internalin like proportable conserved hypothet internalin like probable GTP synth cytochrome c-type probable dependent reconserved hypothet internalin prote hypothetical prote conserved hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote conserved hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote conserved hypothetical prote hypothetical prote

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ALIGNMENTS

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sodium channel protein II - rat
(;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 09-Jul-2004
C;Accession: B25019; S24804
R;Noda, M.; Ikeda, T.; Kayano, T.; Suzuki, H.; Takeshima, H.; Kurasaki, M.;
Rature 320, 188-192, 1986
A;Title: Existence of distinct sodium channel messenger RNAs in rat brain.
A;Reference number: A93377; MUID:86146901; PMID:3754035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sodium channel alpha chain HBA - human
(1/Species: Homo sapiens (man)
(2/Species: Homo sapiens (man)
(2/Date: 20-Oct-1993 #sequence_revision 18-Nov-1994 #text_change 21-Nov-1997
(2/Accession: A46269
(2.M.; Ware, D.H.; Lee, S.C.; Patten, C.D.; Ferrer-Montiel, A.V.; Schinder, A.F.
Proc. Natl. Acad. Sci. U.S.A. 89, 8220-8224, 1992
A;Title: Primary structure, Chromosomal localization, and functional expression of a vol
A;Accession: A46269; MUID:92390418; PMID:1325650
A;Accession: A46269; MUID:92390418; PMID:1325650
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C;Superfamily
C;Keywords: c
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C;Superfamily: sodium chans
C;Keywords: duplication
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A;Experimental source: brain
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A46269
                                                                                                                                                                                                                   RESULT 3
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A; Residues: 1-2005 < AHM>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: A; Accession: I48108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Title: Characterization of endogenous Sodium channel A; Reference number: I48107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Accession: I48108
R;Lalik, P.H.; Krafte, D.S.; Ciccarelli, R.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sodium channel alpha subunit - long-tailed hamster (fragment) C;Species: Cricetulus longicaudatus (long-tailed hamster) C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change
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Best Local S
Matches 28
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Matches 28
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Pred. No. 3.3e-19;
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Pred. No. 2.4e-18;
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                                                                           H.; Takeshima, H.; Kurasaki, M.;
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Query Match

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A;Residues: 1-1977 <KLU>
A;Residues: 1-1977 <KLU>
A;Cross-references: UNIPROT:Q15858; EMBL:X82835; NID:g758109; PIDN:CAA58042.1; PID:g7581C;Superfamily: sodium channel protein C;Keywords: duplication
                                                                                                                                         R;Klugbauer, N.; Lacinova, L.; Flockerzi, V.; Hofmann, F. EMBO J. 14, 1084-1090, 1995
A;Title: Structure and functional expression of a new member A;Reference number: SS4771; MUID:95237189; PMID:7720699
A;Accession: S54771
                                                                                                                                                                                                                                                              C;Species: Homo sapiens (man)
C;Date: 27-Oct-1995 #sequence_revision 03-Nov-1995 #text_change 09-Jul-2004
C;Accession: S54771
                                                                                              A;Status: preliminary; nucleic acid A;Molecule type: mRNA
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A; Residues: 1-1976 < RES>
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A;Title: A novel, abundant sodium channel expressed in neurons and glia. A;Reference number: I56555; MUID:95271284; PMID:7751906
A;Accession: I56555
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                                                                                                                                                                                                                                                                                                                                   sodium channel alpha subunit - human
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C;Species: Rattus norvegicus (Norway rat)
C;Date: 26-011-1996 #sequence_revision 26-Jul-1996 #text_change 09-Jul-2004
C;Accession: I56555
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A;Residues: 183-188,'D',190-305 <SAR>
A;Cross-references: EMBL:X61149; NID:g57074; PIDN:CAA43458.1; PID:g57076
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A;Residues: 1-2005 <NOD>
A;Cross-references: UNIPROT:Q63509
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C; Keywords: duplication; ion transport
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25; Conserv
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100.0%; Pred. No. 1.
Live 0; Mismatches
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1.6e-15;
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Best Local Similarity Matches 23; Conservation

Conservative

100.0%;

Pred. No. 1.2e-13; ; Mismatches 0;

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sodium channel alpha chain -
C;Species: Homo sapiens (man)
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C;Date: 06-Sep-1996 #sequence
C;Accession: I64893
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A;Title: The genomic structure of the human skeletal muscle sodium channel of the human 
                                                                                                                             RESULT
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A; Residues: 1-1836 < RES>
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A;Map position: 17q23.1-17q25: A;Introns: 91/3; 131/2; 161/2; 204/2; 235/1
C;Superfamily: sodium channel protein
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A;Gene: GDB:SCN4A
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A;Residues: 1-1835 <RES>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;Superfamily: sodium channel protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Status: preliminary; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   31, 131-137, 1992
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                                                                                                                                                                                                                                               MVMVIGNLVVLNLFLALLLSSF 805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MVMVIGNLVVLNLFLALLLSSF 805
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           78.6%;
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                                                    human
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
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9.7e-13;
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F;1027-1049/Domain: transmembrane #status predicted <III>F;1027-1049/Domain: transmembrane #status predicted <III>F;1096-1116/Domain: transmembrane #status predicted <III>F;1096-1116/Domain: transmembrane #status predicted <III>F;1122-1143/Domain: transmembrane #status predicted <III>F;1122-1143/Domain: transmembrane #status predicted <III>F;1269-1295/Domain: transmembrane #status predicted <VII>F;1349-1372/Domain: transmembrane #status predicted <VS2>F;1349-1372/Domain: transmembrane #status predicted <VS3>F;1447-1469/Domain: transmembrane #status predicted <VS3>F;1447-1469/Domain: transmembrane #status predicted <VS3>F;1447-1469/Domain: transmembrane #status predicted <VS3>F;1447-1598/Domain: transmembrane #status predicted <VS5>F;1574-1598/Domain: transmembrane #status predicted <VS5>F;1574-1598/Domain: transmembrane #status predicted <VS6>F;1574-1598/Domain: transmembrane #status predicted
sodium channel alpha chain SCN4A, skeletal muscle - C;Species: Homo sapiens (man)
C;Date: 24-May-1996 #sequence_revision 24-May-1996 #C;Accession: I51964
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A;Note: 861-Asp was also found as the result of polymorphism
A;Note: Note-Rep was also found as the result of polymorphism
R;McClatchey, A.I.; Van den Bergh, P.; Pericak-Vance, M.A.; Raskind, W.; Verellen, C.;
Cell 68, 769-774, 1992
Cell 68, 769-774, 1992
A;Title: Temperature-sensitive mutations in the III-IV cytoplasmic loop region of the A;Reference number: A42099; MUID:92154689; PMID:1310898
A;Accession: A42099
                                                                                                                                                  RESULT
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C;Accession: J0648; A42099
R;Wang, J; Rojas, C.V; Zhou, J; Schwartz, L.S.; Nicholas, H.; Hoffmann, E.P. Biochem. Biophys. Res. Commun. 182, 794-801, 1992
Biochem. Biophys. Res. Commun. 182, 794-801, 1992
A;Title: Sequence and genomic structure of the human adult skeletal muscle sodium A;Reference number: JS0648; MUID:92134303; PMID:1310396
A;Accession: JS0648
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C;Superfamily: sodium channel protein
C;Keywords: duplication; glycoprotein
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A;Experimental source: skeletal muscle
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A; Residues: 1299-1351 < MCC>
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A; Residues: 1-1836 < WAN>
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Pred. No.
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5. 9.7e-13;
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                                                                                                                      human
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                                               09-Jul-2004
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RESULT 11
S00320
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A;Residues: 1-1840 <TRI>
A;Cross-references: UNIPROT: P15390; GB:M26643; NID:g205651; PIDN:AAA41682.1; PID:g205652
C;Comment: Action potentials propagated by skeletal muscle sodium channels are responsit C;Comment: This heavily glycosylated protein contains four homologous domains, each of wc;Comment: This protein is distinct from but related to sodium channel proteins isolated C;Comment: This protein is distinct from but related to sodium channel proteins isolated C;Superfamily: sodium channel protein; ion transport; neuromuscular junction; phosphoprd C;Keywords: duplication; glycoprotein; ion transport; neuromuscular junction; phosphoprd C;Soyerfamily: sodium channel protein; ion transport; neuromuscular junction; phosphoprd C;Keywords: duplication glycoprotein; link (protein) (by cAMP-dependent kinase) # F;214,288,291,297,303,309,315,327,356,502,696,954,1184,1198,1563,1702/Binding site: carb
A;Residues: 1-1951 <KAY>
A;Residues: 1-1951 <KAY>
A;Cross-references: UNIPROT:P08104; EMBL:Y00766; NID:g57210; PIDN:CAA68735.1;
A:Note: 270-Ile, 278-Leu, 355-Thr, 513-Lys, and 1059-Arg were also found
                                                                                                                                                                                                                                      sodium channel protein III - rat
C;Species: Rattus norvegicus (Norway rat)
C;Datte: 30-Jun-1989 #sequence_revision 30-Jun-1989 #text_change 09-Jul-2004
C;Accession: S00320
                                                                                                                               A; Reference number: S00320; MUID:88137594; A; Accession: S00320
                                                                                                                                                                     A; Title: Primary structure of rat brain sodium channel
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                                                                                                           A; Molecule type:
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A;Title: Primary structure a
A;Reference number: JN0007;
A;Accession: JN0007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;Trimmer, J.S.; Cooperman, S.S.; Tomiko, S.A.; Zhou, J.; Crean, S.M.; Boyle, Neuron 3, 33-49, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sodium channel protein mul alpha chain, skeletal muscle -
C;Species: Rattus norvegicus (Norway rat)
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A;Introns: 91/3; 131/2; 161/2; 204/2; 235/1;
C;Superfamily: sodium channel protein
C;Keywords: duplication; skeletal muscle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;George, A.L.
Ann. Neurol. 31, 131-137, 1992
A;Title: Primary structure of the adult human skeletal muscle voltage-dependent A;Reference number: 151964; MUID:92246457; PMID:1315496
A;Accession: I51964
A;Accession: I51964
                                                                                                                                                                                           ;Kayano, T.; Noda, M.; Flockerzi, V.; Takahashi, H.; Numa,
EBS Lett. 228, 187-194, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Gene: GDB: SCN4A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Residues:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;Species: Rattus norvegicus (Norway rat);Date: 30-Sep-1990 #text_change 09-Jul-2004;Date: JN0007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
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                                                                                                                                                   PMID:2449363
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o. 9.7e-13;
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9.7e-13;
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RESULT 13
A38195
A38195
sodium channel protein hHI, cardiac - human
N;Alternate names: tetrodotoxin-insensitive, voltage-dependent sodium channe
C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 09-Jul-2004
C;Accession: A38195
C;Accession: A38195
R;Gellens, M.E.; George Jr., A.L.; Chen, L.Q.; Chahine, M.; Horn, R.; Barchi
Proc. Natl. Acad. Sci. U.S.A. 89, 554-558, 1992
A,Title: Primary structure and functional expression of the human cardiac te
                                                                        A; Experimental source: heart C; Superfamily: sodium channel protein C; Keywords: cardiac muscle; duplication
                                                                                                                            A;Cross-references: UNIPROT:Q14524; GB:M77235; NID:g184038; PIDN:AAA58644.1;
                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 1-2016 <GEL>
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A; Residues: 611-662 <SCH>
A; Residues: 611-662 <SCH>
A; Residues: 611-662 <SCH>
A; Residues: 611-662 <SCH>
A; Residues: 611-662 <SCH
A; Residues: 611-662 <SCH
A; Roconstant a source: skeletal muscle
A; Rote: sequence inconsistent with the nucleotide translation
A; Note: sequence extracted from NCBI backbone (NCBIN:97388, NCBIP:97391)
C; Superfamily: sodium channel protein
C; Keywords: duplication; glycoprotein; ion transport; sodium channel; transport; sodium channel; transport; sodium channel;
                                                                                                                                                                                                                                  A;Reference number: A38195; MUID:92115699;
A;Accession: A38195
                                                                                                                                                                                                         A; Status: nucleic acid sequence not
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A;Cross-references: UMIPROT:Q64243
R;Cross-references: UMIPROT:Q64243
R;Schaller, K.L.; Krzemien, D.M.; McKenna, N.M.; Caldwell, J. Neurosci. 12, 1370-1381, 1992
A;Title: Alternatively spliced sodium channel transcripts j A;Reference number: A44824; MUID:92211397; PMID:1313493
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A;Status: prelimina
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A;Title: Toxin and kinetic profile of rat brain type III
A;Reference number: A60054; MUID:90251117; PMID:2160038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sodium channel protein IIIb, long form - C;Species: Rattus norvegicus (Norway rat) C;Date: 03-Mar-1993 #sequence revision 03
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C; Keywords:
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                                                      cardiac muscle; duplication; glycoprotein; heart; ion
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Similarity
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                                                                                                                                                                                                                                                        expression of the PMID:1309946
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                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                  voltage-dependent sodium channel,
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                                                              transport;
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C;Accession: T43167
R;Rosenthal, J.J.; Gilly, W.F.
Proc. Natl. Acad. Sci. U.S.A. 90, 10026-10030, 1993
A;Title: Amino acid sequence of a putative sodium channel A;Reference number: Z22324; MUID:94052096; PMID:8234251
A;Accession: T43167
A;Status: preliminary; translated from GB/EMBL/DDBJ
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A33996
     RESULT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sodium channel protein - California market squid
C;Species: Loligo opalescens (California market squid)
C;Date: 11-Jan-2000 #sequence_revision 11-Jan-2000 #te
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-2019 < ROGs
A; Residues: 1-2019 < ROGs
A; Cross-references: UNIPROT: P15389; GB: M27902; NID: g206857; PIDN: AAA42114.1;
A; Kallen, R.G.; Sheng, Z.H.; Yang, J.; Chen, L.; Rogart, R.B.; Barchi, R.L.
Neuron 4, 233-242, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Rogart, R.B.; Cribbs, L.L.; Muglia, L.K.; Kephart, D.D.; Kaiser, M.W. Proc. Natl. Acad. Sci. U.S.A. 86, 8170-8174, 1989
A;Title: Molecular cloning of a putative tetrodotoxin-resistant rat heart Na(+)
A;Reference number: A33996; MUID:90046760; PMID:2554302
A;Accession: A33996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sodium channel protein I, cardiac - rat
N;Alternate names: sodium channel protein (SkM2) alpha chain
C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Mar-1990 #sequence_revision 30-Mar-1990 #text_change 09-Jul-2004
C;Accession: A33996; JQ0412
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A;Residues: 1-479,481-1712,'T',1714-1963,'R',1965-2019 <KAL>
                                                                                                                                                                                                                                                                                                                                                                                                   A;Residues: 1-1784 <ROS>
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Best Local Similarity
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100.0%; Pred. No. 5.5e-09;
htive 0; Mismatches 0;
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sodium channel alpha chain, exon d-containing splice form - fr (;Species: Drosophila virilis (;Species: 24-Aug-1996 #sequence_revision 08-Nov-1996 #text_chang C;Accession: S60060 R;Thackeray, J.R.; Ganetzky, B. Genetics 141, 203-214, 1995 A;Title: Conserved alternative splicing patterns and splicing A;Reference number: S60051; MUID:96042905; PMID:8536968
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860060

#text_change

09-Jul-2004

signals in the

Drosophila

fruit fly (Drosophila virili

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C;Superfamily: sodium channel protein C;Keywords: alternative splicing; duplication; transmembrane protein F;306-329/Region: alternatively spliced segment i (exon 4) #status experimental F;330-350/Region: alternatively spliced exon a #status experimental F;338-545/Region: alternatively spliced segment b (exon 9) #status experimental F;874-886/Region: alternatively spliced segment e (exon 12) #status experimental F;887-996/Region: alternatively spliced segment f (exon 13) #status experimental F;958-982/Region: alternatively spliced segment h (exon 14) #status experimental
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R;Miyazaki, M.; Ohyama, K.; Dunlap, D.Y.; Matsumura, F.

Mol. Gen. Genet. 252, 61-68, 1996

A;Title: Cloning and sequencing of the para-type sodium channel A;Reference number: S72487; MUID:96397510; PMID:8804404

A;Accession: S72488
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A; Title: Conserved alternative splicing patterns and splicing A; Reference number: S60051; MUID:96042905; PMID:8536968
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A;Experimental source: strain SBO
C;Superfamily: sodium channel protein
C;Keywords: sodium channel; transmembrane protein
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A, Molecule type: nucleic acid
A, Residues: 1-1034 < THA>
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milarity 100.0%;
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C;Accession: A33299
R;Loughney, K.; Kreber, R.; G
R;Loughney, K.; Kreber, R.; G
Cell 58, 1143-1154, 1989
A;Title: Molecular analysis o
A;Reference number: A33299; M
A;Accession: A33299
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sodium channel protein - fruit fly (Drosophila melanogaster) (fr C;Species: Drosophila melanogaster
C;Date: 20-Dec_1989 #sequence_revision 20-Dec-1989 #text_change
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A;Variety: strain CSMA
C;Date: 29-Jul-1997 #sequence_revision 29-Aug-1997 #text_change 09-Jul-2004
C;Accession: $72467; $72487
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C;Keywords: alternative splicing; duplication; transmembrane protein
F;306-329/Region: alternatively spliced segment i (exon 4) #status experimental
F;330-350/Region: alternatively spliced exon a #status experimental
F;338-549/Region: alternatively spliced segment b (exon 9) #status experimental
F;874-886/Region: alternatively spliced segment e (exon 12) #status experimental
F;874-896/Region: alternatively spliced segment f (exon 13) #status experimental
F;958-982/Region: alternatively spliced segment h (exon 14) #status experimental
A;Status:
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A; Residues: 711-819 < MNIV>
A; Residues: 8MNIV>
A; Cross-references: EMBL:U71083
C; Superfamily: sodium channel protein
C; Keywords: duplication; sodium channel; transmembrane
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A;Residues: 1-1689 <m/r>
A;Residues: 1-1689 <m/r>
A;Cross-references: UNIPROT:Q93135; EMBL:U71083; NID:g1633647;
A;Cross-references: UNIPROT:Q93135; EMBL:U71083; NID:g1633647;
R;Miyazaki, M.; Ohyama, K.; Dunlap, D.Y.; Matsumura, F.
Mol. Gen. Genet. 252, 61-68, 1996
A;Title: Cloning and sequencing of the para-type sodium channel
A;Reference number: S72487; MUID:96397510; PMID:8804404
A;Accession: S72487
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A;Description: Cloning and sequencing of the para-type sodium channel gene
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A;Status: nucleic acid sequence not shown
A;Molecule type: nucleic acid
A;Residues: 1-1034 <THA>
A;Cross-references: UNIPROT:Q24714; EMBL:U26343
C;Genetics:
A;Cross-references: FlyBase:FBgn0015214
C;Superfamily: sodium channel protein
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RESULT S72458

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C; Superfamir
C; Keywords:
                                                                                                                                                                                                                                                                                                                                                                                                 sodium channel protein TuNaI - sea squirt (Halocynthia roretzi)
C;Species: Halocynthia roretzi
C;Date: 11-Jan-2000 #sequence_revision 11-Jan-2000 #text_change
C;Accession: T43161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sodium channel SCAP1 alpha chain - California sea hare (;Species: Aplysia californica (california sea hare) (;Species: Aplysia californica (california sea hare) (;Species: 22-Oct-1999 #sequence_revision 22-Oct-1999 #text_change 09-Jul-2004 (;Accession: T30902 R;Dyer, J.R.; Johnston, W.L.; Castellucci, V.F.; Dunn, R.J. DNA Cell Biol. 16, 347-356, 1997 A;Title: Cloning and tissue distribution of the Aplysia Na+ channel alpha-su A;Reference number: Z20929; MUID:97238630; PMID:9115644 A;Accession: T30902 A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                     A;Residues: 1-2049 <OKA>
A;Residues: 1-2049 <OKA>
A;Cross-references: UNIPROT:Q25150; EMBL:D17311; PIDN:BAA04133.1
C;Superfamily: sodium channel protein
                                                                                                                                                                                                                                                                  A;Title: Neural expression of a sodium channel gene requires cell-specific interactions. A;Reference number: Z22320; MUID:95033215; PMID:7946338 A;Accession: T43161 A;Accession: T43161 A;Status: preliminary; translated from GB/EMBL/DDBJ
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A;Residues: 1-1993 <DYE>
A;Cross-references: UNIPROT:P90670; EMBL:U66915; NID:g1842248; PID:g1842249; PIDN:AAC474:
C;Superfamily: sodium channel protein
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C;Keywords: duplication; phosphoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: FlyBase:FBgn0003036 C;Superfamily: sodium channel protein
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A; Residues: 1-1820 <LOU>
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                                     GNLVVLNLFLALLLSSF
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                                                                                 Conservative
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llarity 100.0%; Pred. No. 4.8e-08;
Conservative 0; Mismatches 0;
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                                                                                                                      60.7%;
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Pred. No.
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Pred. No.
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5.2e-0
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C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Jun-1988 #sequence revision 30-Jun-1988 #text_change 09-Jul-2004
C;Accession: A25019; S40783; I84764
R;Noda, M.; Ikeda, T.; Kayano, T.; Suzuki, H.; Takeshima, H.; Kurasaki, M.; Takahashi, Nature 320, 188-192, 1986
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C;Keywords: alternative splicing; glycoprotein; phosphoprotein; sodium channel; transmem
F;302,314,332,967,1451,1470/Binding site: carbohydrate (Asn) (covalent) #status predicte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Sarao, R.; Gupta, S.K.; Auld, V.J.; Dunn, R.J.
Nucleic Acids Res. 19, 5673-5679, 1991
A;Title: Developmentally regulated alternative RNA splicing of rat brain sodium channel
A;Reference number: S40782; MUID:92051314; PMID:1658739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Molecule type: mRNA
A;Residues: 1-2108 <WIL>
A;Cross-references: UNIPROT:Q94615; EMBL:X96668
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A;Title: Identification of mutations in the housefly para-type sodium channel gene assoc
A;Reference number: 872458; MUID:96397509; PMID:8804403
A;Accession: 872458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Map position:
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\;Residues: 177-253 <SAR>
\;Noda, M.; Numa, S.
\. Recept. Res. 7, 467-497, 1987
\;Title: Structure and function of sodium channel
\;Title: Structure 150536; MUID:87311395; PMID:2
\;Accession: 184764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Experimental source: brain Sarao, R.; Gupta, S.K.; Auld, V.J.; Dunn, R.J.
                                                                                                                                                                                                                                           ;Residues: 1-2009 <RES>;Residues: 1-2009 <RES>;Rosidues: PIDN:AAA79965.1; PID:g1041089
                                                                                                                                                                                                                                                                                            , Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;Title: Existence of distinct sodium channel messenger RNAs ;Reference number: A93377; MUID:86146901; PMID:3754035
                                                                                                                                                                                                                                                                                                                      Status: preliminary; translated from GB/EMBL/DDBJ
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Cross-references: UNIPROT:P04774; GB:X03638; NID:g57216; PIDN:CAA27286.1; PID:g57217
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                                                                                                                                                                                            Keywords: duplication; ion transport; sodium channel; transmembrane protein; voltage
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et. 252, 51-60, 1996
  NLVVLNLFLALLISSF 995
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C;Accession: JE0084
R;Spafford, J.D.; Spencer, A.N.; Gallin, W.J.
Biochem, Biophys. Res. Commun. 244, 772-780, 1998
A;Title: A putative voltage-gated sodium channel alpha subunit (PpSCN1) from the hydrozo
A;Reference number: JE0084; MUID:98205797; PMID:9535741
                                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-1695 <SPA>
A; Cross-references: UNIPROT: O62604; GB: AF047380; NID: g3005563;
C; Comment: This protein is the only pore-forming alpha subunit C; Superfamily: sodium channel protein
C; Keywords: glycoprotein
                                                                                                                                                                                                                 F;201,273,299,684,1065,1082,1089,1428/Binding site: carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Species: Polyorchis penicillatus
C;Date: 11-May-1998 #sequence_revision 29-May-1998 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N; Alternate names: PpSCN
                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession: JE0084
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                                                  15 VVLNLFLALLISSF 28
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VVLNLFLALLLSSF 717
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100.0%; Pred. No. 3e-05;
tive 0; Mismatches
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Q81046 homo sapien
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Q8421 rattus norv
Q9uqd0 homo sapien
Q89421 rattus norv
Q15858 homo sapien
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Q08652 rattus norv
Q15858 homo sapien
Q28644 oryctolagus
Q08056 ictalurus p
Q80001 ictalurus p
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Q90273 sternopygus
P35499 homo sapien
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Q861C6 meligethes
Q8mu84 aedes aegyp
Q8it45 pediculus h
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PIR; I48108; I48108.
GO: GO:0016021; C:integral to membrane; II
GO; GO:0005216; P:ion channel activity; II
GO; GO:0006811; P:ion transport; IEA.
InterPro; IPR005821; Ion trans
InterPro; IPR010526; Na_trans_assoc.
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TISSUE-skeletal muscle;

Moran O., Elia L.;

Submitted (JAN-2002) to the EMBL/GenBank/DDBJ genbark Antes 1;

EMBL; AF465250; AAL69973.1; .

GO; GO:0005216; F:ion channel activity; IEA.

InterPro; IFR010526; Na_trans_assoc.

Pfam; PF06512; Na_trans_assoc; 1.
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01-MAR-2002 (TrEMBLrel.
01-MAR-2004 (TrEMBLrel.
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Lalik P.H., Krafte D.S., Ciccarelli R.B
"Characterization of endogus Sodium
chinese hamster ovary cells.";
Am. J. Physiol. 264:803-809(1993).
                                                                                                                                                                                                                                                                                                                                                                                                           Name=scn4a;
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Mammalia; Eutheria;
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Best Local S
Matches 28
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Best Local
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01-MAR-2003
01-MAR-2004
SEQUENCE FROM N.A.
TISSUB-Normal brain;
Ouchida M., Ohmori I.;
Submitted (DEC-2002) to the EMBL/GenBank/DDBJ databarel-
-!- SUBCELLULAR LOCATION: Integral membrane protein
-!- SIMILARITY; Belongs to the sodium channel family
EMBL; AB098335; BAC45228.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q8IUJ6;
                                                                                                                                                                                                                                                                                                     Homo sapiens (Human)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                      Name=SCN1A;
                                                                                                                                                                                                                                                                                                                                                                                                                                Voltage-gated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lu Y., Lopreato G.F., Zakon H.H.;
Submitted (DEC-2002) to the EMBL/GenBank/DDBJ d
EMBL; AY204536; AA060424.1; -.
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:0006812, P:cation_transport; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ictaliurus punctatus (Channel catfish).
Ictaliurus punctatus (Channel catfish).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Siluriformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q800U0;
                                                                                                                                                                                                                                                                       NCBI_TaxID=9606;
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01-JUN-2003 (TrEMBLrel. 24,
01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sodium channel 5 (Fragment)
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01-JUN-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                3 (TrEMBLrel. 23, C
3 (TrEMBLrel. 23, L
4 (TrEMBLrel. 26, L
ed sodium channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; ilarity 100.0%; Conservative 0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel.
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                                                                                                                                                                                                                                                                                                     Chordata;
Primates;
                                                        to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30906 MW;
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l alpha 1 subunit.
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Pred. No. 8.1
0; Mismatches
                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transmembrane;
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Pred. No. 5e-18;
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Pfam; PF006512; IQ; 1.
Pfam; PF06512; Na_trans_assoc; 1
PRINTS; PR0170; NACHANNEL.
PRINTS; PR01664; NACHANNEL1.
SMART; SM00015; IQ; 1.
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GO; GO:0016021
GO; GO:0001518
GO; GO:0005261
GO; GO:0006812
GO; GO:0006814
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099250; Q14472; Q98Z59; Q98Z00;
01-JUN-1994 (Rel. 29, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
Sodium channel protein type II alpha subunit (Voltage-gated sodium channel alpha subunit Nav1.2) (Sodium channel protein, brain II alpha subunit) (HBSC II).
                                                                                               SEQUENCE FROM N.A. (ISOFORMS 1 AND 2).

MEDIJNE=21142400; PubMed=1124598; DOI-10.1016/S0378-1119(00)00594-1;

KABAİ N., Fükushima K., Uçki Y., Praead S., Nosakowski J.,

Sugata K.-I., Sugata A., Nishizaki K., Meyer N.C., Smith R.J.H.;

"Genomic structures of SCN2A and SCN3A - candidate genes for deafness
at the DFNA16 locus.";

Gene 264:113-122(2001).
                                                                                                                                                                                                                                                                                        "Primary structure, chromosomal localization, and functional expression of a voltage-gated sodium channel from human braiproc. Natl. Acad. Sci. U.S.A. 89:8220-8224(1992).
                                                                                                                                                                                                                                                                                                                                               Schinder A.F., McPherson J.D., Wagner-Mcpherson Evans G.A., Montal M.;
SEQUENCE OF 1-89 FROM N.A.
Lu C.-M., Eichelberger J.S., E
"Isolation of the 5'-flanking
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MAMUH
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InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR005821; Ion trans.
InterPro; IPR00048; IO region.
InterPro; IPR005820; M-channel nlg.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR001696; Na channel.
InterPro; IPR008051; Na channell.
InterPro; IPR010526; Na trans assoc.
InterPro; IPR000100; Ribonuclease P.
                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=92390418; PubMed=1325650;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE=Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. (ISOFORM 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Name=SCN2A; Synonyme=SCN2A2, NAC2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS00648; RIBONUCLEASE P; UNKNOWN 1.

Ion transport; Ionic channel; Sodium channel; Transmembrane;

Transport; Voltage-gated channel.

SEQUENCE 1981 AA; 226201 MW; B1D6946D6491B7AD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
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GO:0006812; P:cation transport; IEA.
GO:0006814; P:sodium ion transport; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GO:0016021; C:integral to membrane; IEA.
GO:0001518; C:voltage-gated sodium channel complex;
GO:0005261; F:cation channel activity; IEA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Human)
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  Beckman M.L., Schade S.D., Brow
y region for human brain sodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 28; I
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
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2.5e-17;
                                                                                                                                                                                                                                                                                                                                                                                    Ferrer-Montiel A.V., on C.B., Wasmuth J.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1981;
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                           Brown G.
       channel
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                                                                                                                                                                                                                                                                                                                                                                                         J.J.,
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          EMBL;
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SIMILARITY: Belongs to the sodium
SIMILARITY: Contains 1 IQ domain.
AF059663; AAC14574.1;
AF327726; AAG53413.1;
AF327727; AAG53413.1;
AF327729; AAG53413.1;
AF327729; AAG53413.1;
AF327729; AAG53413.1;
AF3277230; AAG53413.1;
AF3277231; AAG53413.1;
AF3277232; AAG53413.1;
AF3277234; AAG53413.1;
AF3277235; AAG53413.1;
AF3277236; AAG53413.1;
AF3277237; AAG53413.1;
AF3277240; AAG53413.1;
AF3277240; AAG53413.1;
AF3277241; AAG53413.1;
AF3277242; AAG53413.1;
AF3277243; AAG53413.1;
AF3277244; AAG53413.1;
AF3277245; AAG53413.1;
AF3277246; AAG53413.1;
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Han J., Lu C.-M., Brown G.B., Rado T.A.;

"Direct amplification of a single dissected chromosomal segment by polymerase chain reaction: a human brain sodium channel gene is on the chromosome 2q22-q23.";

Proc. Natl. Acad. Sci. U.S.A. 88:335-339(1991).

Proc. Natl. Acad. Sci. U.S.A. 88:335-339(1991).

C of excitable membranes. Assuming opened or closed conformations in response to the voltage difference across the membrane, the protein forms a sodium selective channel through which Na(+) ions may pass in accordance with their electrochemical gradient.

C -! SUBUNIT: The sodium channel consists of a large polypeptide and 2-

3 smaller ones. This sequence represents a large polypeptide.

-! SUBCELLULAR LOCATION: Integral membrane protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               subtype II alpha-Subunit (SCN2A).";
Submitted (APR-1998) to the EMBL/GenBank/DDBJ databases.
[4]
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Lu C.-M., Han J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=91110524;
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"Differential expression of two sodium channel subtypes
Isord=099250-2; Sequence=VSP_001032;

DOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1,S2,S3,S5,S6) and one positively charged segment (S4). Segments S4 are probably the voltage-sensors and at characterized by a series of positively charged amino acids at
                                                                                                                                                                                                                             Event=Alternative splicing; Named isoforms=2; Name=1; Synonyms=Adult, 6A; IsoId=Q99250-1; Sequence=Displayed;
                                                                                                                                                                                          Name=2; Synonyms=Neonatal, 6N;
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Brown G.B., Rado
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channel family.

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GO; GO:0005887; C:integral to plasma membrane; TAS
GO; GO:0005248; F:voltage-gated sodium channel act
gO; GO:0005248; F:voltage-gated sodium channel act
gO; GO:0006814; P:sodium ion transport; TAS.
RinterPro; IPR001811; Cat_Channel_TrpL.
R InterPro; IPR002111; Cat_Channel_TrpL.
R InterPro; IPR005821; Ion_trans.
R InterPro; IPR005821; Ion_trans.
R InterPro; IPR005820; M+Channel nlg.
InterPro; IPR005820; M+Channel.
R InterPro; IPR001526; Ma_trans_assoc.
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;; X63361; CAA46438.1; J
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;; P04775; 1BYY.
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                                                                                                                                  MEDLINE-86146901; PubMed=3754035;

RA Noda M., Ikeda T., Kayano T., Suzuki H., Takeshima H., Kurasaki M.,

RA Takahashi H., Numa S.;

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Takahashi H., Numa S.;

Takahashi H., Numa S.;

Takahashi H., Numa S.;

Takahashi H., Numa S.;

RI Nature 320:188-192(1986)

C. -i FUNCTION. Mediates the voltage-dependent sodium ion permeability of excitable membranes. Assuming opened or closed conformations in response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) ions may pass in accordance with their electrochemical gradient.

-i-SUBUNIT: The sodium channel consists of a large polypeptide and 2-3 smaller ones. This sequence represents a large polypeptide.

-i-SUBCELLULAR LOCATION: Integral membrane protein.

-i-DOMAIN: The sequence contains 4 integral repeats, each with 5 hydrophobic segments ($1,82,53,55) and one positively charged segment ($4). Segments $4 are probably the voltage-sensors and are characterized by a series of positively charged amino acids at every third position.

-i-SIMILARITY: Belongs to the sodium channel family.

-i-SIMILARITY: Contains 1 IQ domain.
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Mammalia; Eutheria;
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           s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EWHI outstation - Buropean Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way iffied and this statement is not removed. Usage by and for commercial
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InterPro; IPR010526; Na_trans_assoc.
Pfam; PF00520; Ion_trans; 4.
Pfam; PF00612; IQ; 1.
Pfam; PF00612; Na_trans_assoc; 1.
Pfam; PF00512; Na_trans_assoc; 1.
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InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR005821; Ion trans.
InterPro; IPR005820; M-channel nlg.
InterPro; IPR005820; M-channel nlg.
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CLTVFMMVMVIGNLVVLNLFLALLLSSF 28
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Sodium channel; Transmembrane;
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Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.

CC -!- SUBCELLULAR LOCATION: Integral membrane protein (By similarity).

CC -!- SIMCLARITY: Belongs to the sodium channel family.

CC -!- SIMILARITY: Belongs to the sodium channel family.

RAMIL; AF123593; AAD17315.1; -.

DR HSSP; P04775; IBYY.

DR GO; GO:0016021; C:integral to membrane; IEA.

GO; GO:0001518; C:voltage-gated sodium channel complex; IEA.

DR GO; GO:0005261; F:cation channel activity; IEA.

DR GO; GO:0005248; F:voltage-gated sodium channel activity; IEA.

DR GO; GO:0005248; F:voltage-gated sodium channel activity; IEA.

DR GO; GO:0005281; P:cation transport; IEA.

DR GO; GO:0006812; P:cation transport; IEA.

DR GO; GO:0006812; P:cation transport; IEA.

DR GO; GO:0006811; Cat_channel_TrpL.

DR InterPro; IPR001621; Calva pore.

DR InterPro; IPR001621; Calva pore.

DR InterPro; IPR001621; Calva pore.

DR InterPro; IPR001625; Na_channel_TrpL.

DR InterPro; IPR001632; Ma_trans_assoc.

DR Ffam; PP00520; Ion_trans; 4.

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DR Pfam; PP00512; Ion_trans_i Sodium channel: Transmembrane;

TON_transpootit; Ionic channel: Sodium channel: Transmembrane;

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TON_TRANSPORTER IONIC Channel: Sodium channel: Transmembrane;
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Transport; Volt
SEQUENCE 2007
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LT 8
                                                                                                                                                Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9YGN7 PRELIMINARY; PRT
Q9YGN7;
Q1-MAY-1999 (TrEMBLrel. 10, Creat
Q1-MAY-1999 (TrEMBLrel. 26, Last
Q1-MAR-2004 (TrEMBLrel. 26, Last
Voltage-dependent sodium channel.
SEQUENCE FROM N.A. (ISOFORM 1), AN HIS-1648.
MEDLINE=20206553; PubMed=10742094;
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cynops.
NCBI_TaxID=8330;
                                                                                                                                                                                                                                                                                             subunit)
                                                                                                                     NCBI_TaxID=9606;
                                                                                                                                                                                                                                                        Name=SCN1A; Synonyms=SCN1, NAC1;
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Voltage-gated channel.
2007 AA; 228398 MW; 013E9B9EC9C294C9 CRC64;
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                                                            (ISOFORM 1), AND VARIANTS GEFS+2 MET-875 AND
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el protein, brain I al
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Haines J.L., "Partial and novel SCN1A m
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"A novel SCNIA mutation
"A need seizures plus --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wallace R.H., Scheffer I.E., Barnett S., Richards M., Dibb Desai R.R., Lerman-Sagie T., Lev D., Mazarib A., Brand N., Ben-Zeev B., Golkhman I., Singh R., Kremmidiottis G., Gardn Sutherland G.R., George A.L. Jr., Mulley J.C., Berkovic S. "Neuronal sodium-channel alphal-subunit mutations in gener epilepsy with febrile seizures plus.", pm. J. Hum. Genet. 68:859-865(2001).
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"Cloning
                    Abou-Khalil B., Ge Q., Desai R., Ryther R., Bar
Haines J.L., Sutcliffe J.S., George A.L. Jr.,
"Partial and generalized epilepsy with febrile
                                                                                                           MEDLINE=21630138;
                                                                                                                                                                                                                                                   De .
                                                                                                                                                                                                                                                                                                    VARIANT SMEI PHE-9
MEDLINE=21257503;
Claes L., Del-Fave
                                                                                                                                                                                                                                                                                                                                                                                                                       epilepsy."
Am. J. Hum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-21152275; PubMed-11254445;
Escayg A., Heils A., MacDonald B.T., Hav
"A novel SCNIA mutation associated with
febrile seizures plus -- and prevalence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VARIANTS GEFS+2 VAL-188; LEU-1353 AND MEDLINE=21152274; PubMed=11254444;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=92275082;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouchida M., Ohmori I.; "Isoforms of human sodium Submitted (OCT-2002) to the submitted (OCT-2002) of the submitted (OCT-2002) to the submitted
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An-Gourfinkel I., Brice A
                                                                                                                                       VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VARIANT GEFS+2 ARG-1204.
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"Differential
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Li X., Jabs E.W., Korenberg J.R., Ingram V.M.;
"Localization of a putative human brain sodium channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 1335-1428 FROM N.A.
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-Y., Goto J., Kanazawa
of cDNA for human volt
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Genet.
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PubMed=11756608;
Pesai R., Ryther R., Bazyk
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voltage-gated so
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ium channel
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, Moulard
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                                                                           Bailey
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InterPro; InterPro; InterPro; InterPro; InterPro;

InterPro; InterPro;

Ion

interPro;

o; IPR001682; Ca/Na_pore.
o; IPR002111; Cat _channel_TrpL.
o; IPR005821; Ion_trans.
o; IPR005820; M+channel_nlg.
o; IPR001696; Na_channel].
o; IPR001696; Na_channel1.

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MIM;
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EMBL;
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EMBL;
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PIR; S29184; S29184.
HSSP; P04775; 1BYY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  between the Swiss Institute of Bioinformatics and the EMBL outsuche European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for contents.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   entities requires a license agreement (S or send an email to license@isb-sib.ch).
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                                                                                                                                              ; GO:0016021;
; GO:0005248;
; GO:0006814;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     decline.
- SIMILARITY:
- SIMILARITY:
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every third position.

DISEASE: Defects in SCNIA are the cause of generative generative with febrile seizures plus type 2 (GEFS+2) [MIM:604233]. This autosomal dominant disorder is characterized by febrile seizures in children and afebrile seizures in adults. Penetrance is in children and a large intrafamilial variability of the phenotyp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FUNCTION: Mediates the voltage-dependent sodium ion permeability of excitable membranes. Assuming opened or closed conformations in response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) ions may pass in accordance with their electrochemical gradient.

SUBCUNIT: The sodium channel consists of a large polypeptide and 2-3 smaller ones. This sequence represents a large polypeptide.

SUBCILIULAR LOCATION: Integral membrane protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             is observed.

DISEASE: Defects in SCNIA are a cause of severe myoclonic epilepsy in infancy (SMEI) [MIM:607208], a severe form of generalized epilepsy with febrile seizures. SMEI is a rare disorder characterized by normal development before onset, seizures beginning in the first year of life in the form of generalized or unilateral febrile clonic seizures, secondary appearance of myoclonic seizures, and occasionally partial seizures. It is associated with ataxia, slowed psychomotor development, and mental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1, S2, S3, S5, S6) and one positively charged segment (S4). Segments S4 are probably the voltage-sensors and an characterized by a series of positively charged amino acids at
                                                                                                                                                                                                                                182389; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Name=2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALTERNATIVE PRODUCTS: Event=Alternative spl
                                                                                                                                                                                                                                                                                                              M91803; -;
                                                                                                                                                                                                                                                                                                                                X65362; CAA46439.1; -.
                                                                                                                                                                                                                                                                                                                                                                   AB093548;
AB093549;
                                                                                                                                                                                                                                                                                                                                                                                                     AY043484;
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                                                                                                                                                                                                                                                 HGNC:10585; SCN1A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          experimental confirmation available;
                                                                                                                                                                                                                                                                                                                                                               ; AAK00217.1; -.; AAK95360.1; -.; BAC21101.1; -.; BAC21102.1; -.;
                                                                                                                                         C:integral to membrane; NAS. F:voltage-gated sodium channel P:sodium ion transport; NAS.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (See http://www.isb-sib.ch/announce/
                                                                                                                                                                activity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL outstation
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SEQUENCE FROM N.A.

Lu Y., Lopreato G.F., Zakon H.H.;

Lu Y., Lopreato G.F., Zakon H.H.;

Submitted (DEC-2002) to the EMBL/GenBank/DDBJ

EMBL; AY204532; AA060420.1; -.

GO; GO:0016021; C:integral to membrane; IEA.

GO; GO:0005261; F:cation channel activity; IEA.

GO; GO:0006812; P:cation transport; IEA.

InterPro; IPR001682; Ca/Na_pore.

InterPro; IPR005821; Ion_trans.

InterPro; IPR005820; M-channel_nlg.

InterPro; IPR010586; Na_trans_assoc.

Pfam; PF00520; Ion_trans; 1.
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Best Local Similarity
                                                                                                                                                                                                                                                                     Q800U4 PRELIMINARY; PRT; 472 AA.
Q800U4;
Q800U4;
Q800U4;
Q1-JUN-2003 (TrEMBLrel. 24, Created)
Q1-JUN-2003 (TrEMBLrel. 26, Last sequence update)
Q1-MAR-2004 (TrEMBLrel. 26, Last annotation update)
Sodium channel 1 (Fragment).
Ictalurus punctatus (Channel catfish).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Siluriformes;
Ictaluridae; Ictalurus.
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Pfam; PF06512; Na trans assoc; 1
PRINTS; PR00170; MACHANNEL.
PRINTS; PR01664; NACHANNEL1.
PROSITE; PS50096; IQ; FALSE_NEG
                                                                                                                                                                                                                                                   NCBI_TaxID=7998;
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llarity 100.0%;
Conservative
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EMBL/GenBank/DDBJ databases
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Pred. No. 2.5e-17;
Mismatches 0;
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ked (GlcNAc.
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Best Local S
Matches 25
                                Q90Z28
Q90Z28;
Q90Z28;
Q1-DEC-2001 (TrEMBLrel. 19, Cr
01-DEC-2001 (TrEMBLrel. 19, L;
01-MAR-2004 (TrEMBLrel. 26, L
                                                                                                                                                                                       Matches
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Best Local
Sodium channel 3 (Fragment).
Sternopygus macrurus.
Eukaryota; Metazoa; Chordata; C.
Actinopterygii, Neopterygii; Te.
Sternopygidae; Sternopygus.
NCBI_TaxID=77841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF06512; I
Ion transport;
NON_TER 1
NON_TER 472
SEQUENCE 472
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O1-DEC-2001 (TrEMBLrel. 19,
O1-DEC-2001 (TrEMBLrel. 29,
O1-MAR-2004 (TrEMBLrel. 26,
Sodium channel 5 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                   Sternopygus macrurus.
Eukaryota; Metazoa; Chordata;
Actinopterygii; Neopterygii; 7
Sternopygidae; Sternopygus.
                                                                                                                                                                                                                                                                                                                                    Lopreato G.F., Wilcox T.P., Za
                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. MEDLINE=21310016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q90Z26
                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=77841;
                                                                                                                          182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PF06512; Na_trans_assoc; 1.
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472 AA;
                                                                                                                                                           Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ionic
                                                                                                                                                                                                                                                                                                                                            PubMed=11416226;
Y., Southwell A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       53917 MW;
                                                                                                                                                                  89.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               channel; Transmembrane; Transport
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        89.3%;
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Last
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                                                                 Created)
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                                                                                                                                                                  Score 2
                                                                                                                                                                                                                                                                                                                                                                                            ; Craniata;
Teleostei;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 25;
Pred. No.
                 Craniata; Vertebrata; Euteleostomi; Teleostei; Ostariophysi; Gymnotiform
                                                                                                                                                                                                                    Transmembrane; Transport
                                                                                                                                                                                           F2429665544CAB0C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3DD68F4EAE484FAB CRC64
                                                                                                                                                           Mismatches
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                                                                                                                                                                                                                                                                                                                                              Atkinson
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                                                                                                                                                                  DB 2;
7e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2; 1
                                                                                                                                                                                                                                                                                                                                                                                            Vertebrata; Euteleostomi;
Ostariophysi; Gymnotiform
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                                                                                                                                                                         Length 743;
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                                                                                                                                                                                                                                                                                                                                              Hillis
                                                                                                                                                                                                                                                                                                                              vertebrates.";
                  Gymnotiformes;
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AID DAR RESERVE DE RES
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Best Local S
Matches 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lopreate G.F., Lu Y., Southwell A., Atkinson N.S., Hillis A Wilcox T.P., Zakon H.H.;

Wilcox T.P., Zakon H.H.;

"Evolution and divergence of sodium channel genes in verte Proc. Natl. Acad. Sci. U.S.A. 98:7588-7592(2001).

REMBL; AF378141; AAK55439.1; -.

RGO; GO:0005261; F:cation channel activity; IEA.

RGO; GO:0005261; F:cation transport; IEA.

RGO; GO:0005261; F:cation transport; IEA.

RINterPro; IPR001682; Ca/Na pore.

RINterPro; IPR005211; Cat_channel_TrpL.

RINterPro; IPR005821; Ion_trans.

RINterPro; IPR005821; Ion_trans.

RINterPro; IPR005820; M+channel_nlg.

RINterPro; IPR005820; M+channel_nlg.

REFam; PF00520; Ion_trans; 2.

R Pfam; PF00520; Ion_trans_assoc.

R Pfam; PF00521; Na_trans_assoc; 1.

NON TRP
                                                                                                           GG; GG:0005248; F:voltage-gated sodium chan
GG; GG:0005812; P:cation transport; IEA.
GG; GG:0006812; P:cation transport; IEA.
GG: GG:0006814; P:sodium ion transport; IEZ.
InterPro; IPR001682; Ca/Na pore.
InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005820; Na_channel.
InterPro; IPR0015820; Na_channel.
InterPro; IPR001526; Na_channel.
InterPro; IPR01526; Na_channel.
InterPro; IPR01526; Na_channel.
InterPro; IPR01526; Na_channel.
InterPro; IPR01526; Na_channel.
Pfam; PF00520; IOn trans; 4.
Pfam; PF00612; IQ; 1.
Pfam; PF06512; Na trans assoc; 1.
PRINTS; PR0170; NACHANNEL.
PRINTS; PR01667; NACHANNEL8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
Sodium channel alpha subunit (Fragment).
Fugu rubripes (Japanese pufferfish) (Takifugu rubripes).
Eukaryota; Metazoa; Chordata; (Craniata; Vertlebrata; Euteleostomi;
Bukaryota; Meopterygii; Teleostei; Buteleostei; Neoteleostei;
Acanthomorpha; Acanthopterygii; Percomorpha; Tetradontiformes;
Tetradontoidea; Tetraodontidae; Takifugu.
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NON_TER
SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1996
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=31033;
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Lopreato G.F., Lu Y., Southwell A., Atkinson N.S., Hillis D.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      [1]
SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                 GO:0016021; C:integral to membrane; IEA. GO:0001518; C:voltage-gated sodium channel GO:0005261; F:cation channel activity; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: Integ SIMILARITY: Belongs to the Li D37977; BAA07195.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VFMMVMVIGNLVVLNLFLALLLSSF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (AUG-1994) to the EMBL/GenBank/DDBJ databases.
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751 AA;
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84598 MW;
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26,
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0; Mismatches
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7e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
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                                                                                                                                                                                                                                                                                                                                                                                           activity; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                            complex;
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                                                                                                                                                                                                                                                                                                                                                                                                                                            IEA.
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RESULT 13
Q9IBF1
                                                                                                                   SON WARRANT DE RESERVATION DE RESERVATION DE LA COCCEPTATION DE RESERVATION DE RE
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                                                                                                                                                                                                            R GO; GO:0016021; C:integral to membrane; IEA.

R GO; GO:0001518; C:voltage-gated sodium channel complex; IEA.

R GO; GO:0005261; F:cation channel activity; IEA.

R GO; GO:0005261; F:cation channel activity; IEA.

R GO; GO:0005261; F:cation transport; IEA.

R GO; GO:0005261; P:cation transport; IEA.

R GO; GO:0006812; P:cation transport; IEA.

R GO; GO:0006814; P:sodium ion transport; IEA.

R GO; GO:0006814; P:sodium ion transport; IEA.

R InterPro; IPR001682; Ca/Na pore.

R InterPro; IPR002111; Cat Channel TrpL.

R InterPro; IPR002111; Cat Channel nlg.

R InterPro; IPR005821; Ion_trans.

R InterPro; IPR005821; Ion_trans.

R InterPro; IPR001696; Na_channel nlg.

R InterPro; IPR001696; Na_channel.

R InterPro; IPR001696; Na_channel.

R InterPro; IPR001696; Na_trans_assoc.

R Pfam; PF00520; Ion_trans; 4.

R Pfam; PF00512; Na_trans_assoc; 1.

R PRINT; PR00170; NaCHANNEL.

R PRINT; PR00170; NaCHANNEL.
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Best Local S
Matches 25
  Matches
                            Query Match
Best Local (
                                                                                                                                                                                           Pfam; PF06512; Na trar
PRINTS; PR00170; NACHP
PROSITE; PS50096; IQ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Biochem. Biophys. Res. Commun. 267:403-412(; -!- SUBCELLULAR LOCATION: Integral membrane -!- SIMILARITY: Belongs to the sodium channe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Binding properties of 3H-PbTx-3 and 3H-saxitoxin to and to skeletal muscle membranes of puffer fish Fugu primary structure of a voltage-gated Na+ channel alph from skeletal muscle of F. pardalls.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Voltage-gated sodium channel.

Takifugu pardalis (Panther puffer).

Takifugu pardalis (Panther puffer).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;

Acanthomorpha; Acanthopterygii; Percomorpha; Tetraddontiformes;

Tetradontoidea; Tetraodontidae; Takifugu.
                                                                                                                Transport;
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AB030482; BAA
HSSP; P04775; 1BYY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=Skeletal muscle;
MEDLINE=20090650; PubMed=10623632;
Yotsu-Yamashita M., Nishimori K., Nitanai Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15, 01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yasumoto T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
TISSUE=Skeletal mu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=98921;
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01-0CT-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SMART; SM00015; IQ; 1.

PROSITE; PS50096; IQ; 1.

Ion transport; Ionic channel; Sodium
                                                                                                                                                                    on transport; Ionic channel; Sodium channel; Transmembrane;
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25; Conser
                               Similarity
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                                                                                                             Voltage-gated channel.
1880 AA; 212084 MW;
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89.3%;
ilarity 100.0%;
Conservative
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larity 100.0%;
Conservative (
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%; Pred. No. 1.4
0; Mismatches
Score 25; DB; Pred. No. 1.5
  0;
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Last annotation update)
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gral membrane protein
sodium channel famil)
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                                                         DB 2;
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1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  saxitoxin to brain membranes
er fish Fugu pardalis, and the
channel alpha-subunit (fMNa1)
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                               .5e-1
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                                                      Length 1880;
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  Indels
                                                                                                                CRC64;
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Interpro; IPR002111; Cat_channel_TrpL.
Interpro; IPR002821; Ion_trans.
Interpro; IPR005821; IO_Tegion.
Interpro; IPR0005820; M-channel_nlg.
Interpro; IPR001696; Na_channel.
Interpro; IPR001696; Na_channel8.
Interpro; IPR001696; Na_channel8.
Interpro; IPR001696; Na_channel8.
                                                                                                                                           Q63541
Q63541;
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01-NOV-1996 (TrEMBLrel. 0
01-NOV-1996 (TrEMBLrel. 0
01-MAR-2004 (TrEMBLrel. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9DF53;
Q9DF53;
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Brachydanio rerio (Zebrafish)
Eukaryota; Metazoa; Chordata;
Actinopterygii; Neopterygii; T
Cyprinidae; Danio.
NCBI_TaxID=7955;
Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PP00520; Ion_trans; 4. — Pfam; PP00612; IQ; I. Pfam; PP006512; Na trans assoc; PRINTS; PR0170; NACHANNEL. PRINTS; PR01667; NACHANNELB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tsai C.-W., Tseng J.-J., Horng J.-F., Wu J.-L., Tsay H.-Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: Integral membrane protein (By -!- SIMILARITY: Belongs to the sodium channel family.
EMBL; AF297658; AAG18440.1; -.
HSSP; P04775; 1BYY.
                                                                          Rattus norvegicus (Rat).
                                                                                                  Sodium chan
Name=SCP6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SMART; SM00015; IQ; 1.
Ion transport; Ionic channel;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sodium channel protein Scn8a.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GO:0016021; C:integral to membrane; IEA.
GO:0001518; C:voltage-gated sodium channel complex; IEA.
GO:0005261; F:cation channel activity; IEA.
GO:0005268; F:voltage-gated sodium channel activity; IEA.
GO:0005261; P:cation transport; IEA.
GO:0006812; P:cation transport; IEA.
GO:0006814; P:sodium ion transport; IEA.
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                                                                                                                     channel protein
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                            Chordata;
Rodentia;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 25;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Craniata; Vertebrata; Euteleostomi; Teleostei; Ostariophysi; Cypriniformes;
                            Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sodium channel; Transmembrane;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
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CINS_MOUSE STANDARD; PRT; 1978 AA.

CINS_MOUSE STANDARD; PRT; 1978 AA.

AC GOWTU3; Q60828; Q60858; Q62449;

DT 10-OCT-2003 (Rel. 42, Created)

DT 10-OCT-2003 (Rel. 42, Last sequence update)

DT 05-JUL-2004 (Rel. 44, Last annotation update)

DE Sodium channel protein type VIII alpha subunit (Voltage-gated sodium channel alpha subunit Nav1.6).

GN Name=Scn8a; Synonyms=Nbnal;

OS Mus musculus (Mouse).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

OC NCBI_TaxID=10090;

RN [1]

RP SEQUENCE FROM N.A. (ISOFORMS 1 AND 3).

RC STRAIN=C57BL/6J;

RX MEDLINE=99047535; PubMed=9828131;

RA Flummer N.W., Galt J., Jones J.M., Burgess D.L., Sprunger L.K.,

RA Kohrman D.C.; Meisler M.H.;

RT intragenic markers for the human neuronal sodium channel gene SCN8A.";

RL Genomics 54:287-296(1998).
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Best Local S
Matches 25
                                       SEQUENCE FROM N.A. (ISOFORMS 1 AND 3).

STRAIR-C57BL/60;

MEDLINE=99047535; PubMed=9828131;

Plummer N.W., Galt J., Jones J.M., Burgess D.L., Sprunger L.K.,

ROhrman D.C., Meisler M.H.;

"Exon organization, coding sequence, physical mapping, and polymorphic intragenic markers for the human neuronal sodium channel gene SCN8A.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0001518; C:vollage-gated sodium channel complex;
GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:0005248; F:vollage-gated sodium channel activity;
GO; GO:0005248; F:cation transport; IEA.
GO; GO:0006812; P:cation transport; IEA.
GO; GO:0006814; P:sodium ion transport; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS50096; IQ; 1.
PROSITE; PS00878; ODR_DC_2_1; UNKNOWN_1.
Ion transport; Ionic channel; Sodium channel; Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRINTS; PR00170; NACHANNEL.
PRINTS; PR01667; NACHANNEL8.
SMART; SM00015; IQ; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00520; Ion_trans; 4. Pfam; PF00612; IQ; 1. Pfam; PF06512; Na_trans_assoc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; L39018; AAC420
PIR; I56555; I56555.
HSSP; P04775; IBYY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "A novel, abundant sodium channel expressed in J. Neurosci. 15:3231-3242(1995).
-I- SUBCELLULAR LOCATION: Integral membrane pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=Sprague-Dawley, TISSUE-Brain, MEDLINE=95271284; PubMed=7751906; Schaller K.L., Krzemien D.M., Yarows Caldwell J.H.;
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o; IPR002111; Cat channel TrpL.
o; IPR000183; Decarbxylse2.
o; IPR005821; Ion trans.
o; IPR000048; IQ region.
o; IPR0005820; M+Channel nlg.
o; IPR001696; Na channel.
o; IPR001696; Na channel8.
o; IPR010526; Na trans assoc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1976 ĀA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Voltage-gated channel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
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100.0%; Pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 225227 MW; B6949327A47FA88A CRC64;
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1976,
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Kohrman D.C., Smith M.R., Goldin A.L., Harris J., "A missense mutation in the sodium channel Scn8a cerebellar ataxia in the mouse mutant jolting."; J. Neurosci. 16:5993-5999(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Plummer N.W., McBurney M.W., Meisler M.H.;
"Alternative splicing of the sodium channel SCN8A predicts a truncated two-domain protein in fetal brain and non-neuronal cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fan Z., Kyle J.W., Makielski J.C.; "A putative novel Na channel alpha NB2a neuroblastoma cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Spear B., Meisler M.H.;
"Mutation of a new sodium channel
'motor endplate disease'.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. (ISOFORM 2), T
STRAIN=(57BL/6J; TISSUE=Brain;
MEDLINE=95400328; PubMed=7670495;
                                                                                                                                                                                                                                                                                                                                                                             mouse:
                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=21423786; PubMed=11532991; De Repentigny Y., Cote P.D., Pool Vidal S.M., Kothary R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=DBA/2WyDi;
MEDLINE=96424513; PubMed=8815882;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kohmman D.C., Harris J.B., Meisler M.:
"Mutation detection in the med and me
"Mutation detection in the med and me
ScnBa. Unusual splicing due to a mino
J. Biol. Chem. 271:17576-17581 (1996).
                                                                                                                                                                                                                                                                                                                                                                                         "Pathological and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VARIANT MEDJO THR-1317, AND VARIANT LEU-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=97442476; PubMed=9295353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALTERNATIVE SPLICING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (MAR-1995) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 1411-1686 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=96291923;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSUE=Brain,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biol.
 hydrophobic segments (S1,S2,S3,S5,S6) and one positively charge segment (S4). Segments S4 are probably the voltage-sensors and characterized by a series of positively charged amino acids at every third position.

DISEASE: Defects in ScnBa are the cause of motor endplate diseated). Med is a recessive neuromuscular disorder that is
                                                                               DOMAIN: The
                                                                                                        TISSUE
                                                                                                                                                                                                                                                                              of excitable membranes. Assuming opened or closed conformations in response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) ions may pass in accordance with their electrochemical gradient. SUBCELLULAR LOCATION: Integral membrane protein.
                                                                                                                                             Name=4; Synonyms=:
IsoId=Q9WTU3-4;
                                                                                                                                                                                                                                                                      ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                   FUNCTION: Mediates the voltage-dependent sodium of excitable membranes. Assuming opened or close
                                                                                                                                   Name=5
                                                                                                                                                                                        Name=3
                                                                                                                                                                                                                                          Event=Alternative splicing; Named isoforms=5;
Name=1; Synonyms=18A;
                                                                                                                     IsoId=Q9WTU3-5;
                                                                                                                                                                                                                              IsoId=Q9WTU3-1;
                                                                                                                                                                          IsoId=Q9WTU3-3;
                                                                                                                                                                                                     IsoId=Q9WTU3-2;
                                                                                                                                                                                                                                                                                                                                                            logical and genetic analysis o
a new allele of Scn8a.";
ol. Genet. 10:1819-1827(2001).
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                                                                                                         SPECIFICITY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N.A. (ISOFORM 2), TISSUE SPECIFICITY, 5J; TISSUE=Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            272:24008-24015(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE=Brain;
                                                    sequence contains 4 internal repessegments (S1,S2,S3,S5,S6) and one ). Segments S4 are probably the vo.
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                                                                                                                                                              Sequence=VSP_050595;
18N;
                                                                                                        Sequence=VSP_050598;
7: Expressed in brain
                                                                                                                                                                                                Sequence=VSP_050594;
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                                                                                                                                             Sequence=VSP_050596,
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class AT-AC
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DISEASE: Defects in Scn8a are the cause of the jolting mutant (medjo), a mild form of motor endplate disease which is characterized by the absence of spontaneous, regular, simple discharges from Purkinje cells. After 3 weeks of age, jolting mic are unsteady and have wide-based gait and a rhythmical tremor of head and neck induced by attempted movement.

DISEASE: Defects in Scn8a are a cause of degenerating muscle cause of degenerating degenerating muscle cause of degenerating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          wrebellar Purkinje cells. It produces paralysis of hind limbs, severe musolethality.
SIMILARITY: Belongs to the sodium channel family. SIMILARITY: Contains 1 IQ domain.
                                                                                                                                                           (dmu). Dmu is an autosomal recessive neuromuscular disorder tis characterized by skeletal and cardiac muscle degeneration. produces early onset progressive loss of mobility of the hind limbs and subsequent lethality in the first month of life.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            characterized by lack of signal transmission at the neuromuscular
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atrophy and
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SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EM and this statement is not removed. requires a license agreement (See an email to license@isb-sib.ch). Bioinformatics Institute. -profit ormatics Institute. There are no rest institutions as long as its content http://www.isb-sib.ch/announce/ Usage γď restrictions and TBMBL a collaboration -MBL outstation for Ħ commercia ខ្ល

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GO; GO:0006814; F:5001.

InterPro; IPR001682; Ca/Na pore.

InterPro; IPR002111; Cat channel TrpL.

InterPro; IPR005821; Ion trans.

InterPro; IPR000948; IQ region.

InterPro; IPR0005820; M+channel nlg.

InterPro; IPR001696; Na channel.

R InterPro; IPR001696; Na channel.
                                                                                                                                                                                                                                InterPro; IPR008054; Na_channel8
InterPro; IPR010526; Na_trans_as
Pfam; PF00520; Ion trans; 4.
Pfam; PF00612; IQ; 1.
Pfam; PF00612; Na_trans_assoc; 1
PRINTS; PR00170; NACHANNEL.
PRINTS; PR01667; NACHANNEL8.
                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; U26707; AAC52242.1;
EMBL; U59964; AAC52708.1;
EMBL; U59963; AAC52708.1;
EMBL; U33158; AAA65599.1;
HSSP; P04775; 1BYY.
                                                                                                                                                                                                         PROSITE; PS50096; IQ; 1.

Alternative splicing; ATP-binding; Disease mutation; Glycoprotein;
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                                                                                                                                                                                                                                                                                                                                                                         GO:0006814; P:sodium ion transport; NAS
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                                                                                                                                                                                           Transmembrane;
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Matches 25
C TISSUENDE FROM N.A.

C TISSUENDE FROM TOOK ganglia;

X MEDLINE-98264329; PubMed-9603190;

A Dietrich P.S., McGivern J.G., Delgado S.G., Koch B.D., E

Hunter J.C., Sangameswaran L.;

I "Functional analysis of a voltage-gated sodium channel a

r variant from rat dorsal root ganglia.";

L J. Neurochem. 70:2262-2272(1998).

C -!- SUBCELULAR LOCATION: Integral membrane protein (By

C -!- SIMILARITY: Belongs to the Sodium channel family.

R EMBL; AF049239; AAC26014.1; -.

R HSSP; P04775; 1BYV.

R GG; GG:00016521; C:integral to membrane; IEA.

R GG; GG:00015248; F:voltage-gated sodium channel activity;

R GG; GG:0006814; P:cation channel activity;

R GG; GG:0006814; P:sodium ion transport; IEA.

R GG; GG:0006814; P:sodium ion transport; IEA.
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O88420;
O88420;
O1-NOV-1998 (TrEMBLrel. 08, Created)
O1-NOV-1998 (TrEMBLrel. 08, Last sequence update)
O1-NOV-1998 (TrEMBLrel. 26, Last annotation update)
O1-MAR-2004 (TrEMBLrel. 26, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
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  GO:0016021; C:integral to membrane; IEA. GO:0001518; C:voltage-gated sodium channel complex; GO:0005261; F:cation channel activity; IEA. GO:0005248; F:voltage-gated sodium channel activity GO:0006812; P:cation transport; IEA. GO:0006814; P:sodium ion transport; IEA.
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Pfam; PF00612; IQ; 1.
Pfam; PF06512; Na_trang_assoc; 1.
Pfam; PF06512; Na_CHANNEL.
PRINTS; PR00170; NA_CHANNEL8.
PRINTS; PR01667; NA_CHANNEL8.
SWART; SM00015; IQ; 1.
PROSITE; PS00096; IQ; 1.
PROSITE; PS00096; IQ; 1.
PROSITE; PS00078; ODR DC 2 1; UNKNO Ion transport; Voltage-gated channel.
Transport; Voltage-gated channel.
                         Jeong S.-Y., Goto J., Kanazawa I.;
"Cloning of cDNA for human voltage-gated sodium channel a SCNBA.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: Mediates the voltage-dependent sodium ion in the contract of the membranes. Assuming pended or closed color of excitable membranes. Assuming pendent the membranes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Plummer N.W., McBurney M.W., Meisler M.H.;
"Alternative splicing of the sodium channel SCNBA predicts a truncated
two-domain protein in fetal brain and non-neuronal cells.";
J. Biol. Chem. 272:24008-24015(1997).
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;; IPR005821; Ion_trans.
;; IPR005820; M-channel nlg.
;; IPR005820; M-channel.
;; IPR001696; Na_channel8.
;; IPR010526; Na_trans_assoc.
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REMBL; AF050711; AAD15789.1; JONNED.

REMBL; AF050713; AAD15789.1; JOINED.

REMBL; AF050713; AAD15789.1; JOINED.

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REMBL; AF050717; AAD15789.1; JOINED.

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may pass in accorda
- SUBCELLULAR LOCATIC
- ALTERNATIVE PRODUCT
Event=Alternative s
                                                                                                                                                                                                                       ; 600702; -. GO:0001518; C:voltage-gated sodium c GO:0005248; P:voltage-gated sodium c GO:0006814; P:sodium ion transport;
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SIMILARITY: Belongs to the sodium channel family.
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IsoId=Q9UQD0-2; Sequence=VSP_050589, VSP_050590;
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we=4; Synonyms=18N;
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Pfam; PF06512; Na trans assoc; 1.

PRINTS; PR00170; NACHANNEL.

PRINTS; PR01667; NACHANNEL8.

PROSITE; PS50096; IQ; 1.

Alternative splicing; ATP-binding; Glycoprotein; Ion transport; Ionic channel; Multigene family; Repeat; Sodium channel; Transmembrane; Voltage-gated channel.
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RA Dietrich P.S., McGivern J.G., Delgado S.G., Koch B.D., Eglen R.M.,
RA Hunter J.C., Sangameswaran L.;
RT "Functional analysis of a voltage-gated sodium channel and its splice
RT variant from rat dorsal root ganglia.";
L. Neurochem. 70:2262-2272(1998).
C. :- SUBCELLULAR LOCATION: Integral membrane protein (By similarity).
C. :- SUBCELLULAR LOCATION: Integral membrane; nearly selective                                                                                                                     Query Match
Best Local S
Matches 25
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PÉAM; PF00512; IO, T.

PÉAM; PF00512; Na_trans_assoc; 1.

PÉAM; PF00512; NACHANNEL.

PRINTS; PR00170; NACHANNELB.

PRINTS; PR01667; NACHANNELB.

SMART; SM00011; IQ; 1.

PROSITE; PS00067; IQ; 1.

PROSITE; PS000878; ODR DC 2_1; UNKNOWN 1.

PROSITE; PS000878; ODR DC 2_1; Sodium Channel; Transmembrane;
Ion transport; Ionic Channel; Sodium Channel; Transmembrane;
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O88421;
O1-NOV-1998 (TERMBLrel. 08, Created)
O1-NOV-1998 (TERMBLrel. 08, Last sequence update)
O1-MAR-2004 (TERMBLrel. 26, Last annotation update)
Voltage-gated sodium channel variant rPN4a.
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CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                        Transport;
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
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25; Conser
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VFMMVMVIGNLVVLNLFLALLLSSF
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1988 AA; 226186 MW;
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-> I (in Ref. 1).
-> A (in Ref. 4).
OEFC7BFB137FD4FO (
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1.6e-14;
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RESULT 20
Q15858
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RESULT 21
Q2864
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Best Local S
Matches 23
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Interpro; IPROLUDAV,
Pfam; PF00520; Ion trans; 4.
Pfam; PF00612; IQ; 1.
Pfam; PF06512; Na trans assoc; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR001582; Ca/Na pore.
InterPro; IPR002111; Cat_channel_TrpL.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005821; Ion_trans.
InterPro; IPR000048; Io_region.
InterPro; IPR0016820; M-channel nlg.
InterPro; IPR001696; Na_channel.
InterPro; IPR01696; Na_trans_assoc.
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Q15858; PRELIMINARY, I
Q15858; PRELIMINARY, I
Q1-NOV-1996 (TrEMBLrel. 01, Las
01-MAR-2004 (TrEMBLrel. 26, Las
Sodium channel alpha subunit.
Name=hNE-Na;
                                                                                                                                                                                                          Oryctolagus cuniculus (Rabbit)
Bukaryota; Metazoa; Chordata; Craniata; Ven
Mammalia; Eutheria; Lagomorpha; Leporidae;
NCBI TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBO J. 14:1084-1090(1995).

-:- SUBCELLULAR LOCATION: Integral membrane protein (By similarity).

-:- SIMILARITY: Belongs to the sodium channel family.

EMBL; X82835; CAA58042.1; -.

EMBL; X82835; CAA58042.1; -.

FIR; S54771; S54771.

HSSP; P04775; LBYY.

Genew; HGNC:10597; SCN9A.
SEQUENCE FROM N.A.
STRAIN=New Zealand White; TISSUE=Sciatic
MEDLINE=96074641; PubMed=7479931;
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Mammalia; Eutheria;
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SMART; SM00015; IQ; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Klugbauer N., Lacinova L., Flockerzi V., Hofmann "Structure and functional expression of a new mem terrodotoxin-sensitive voltage-activated sodium chuman neuroendocrine cells.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6 MMVMVIGNLVVLNLFLALLLSSF 28
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1977 AA; 225195 MW;
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Primates;
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100.0%; Pred. No. 1.
ive 0; Mismatches
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Last annotation updat
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                                                                                                                                                            Vertebrata; Euteleostomi;
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                                                                                                                                    Oryctolagus.
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v member of
um channel
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family
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RESULT
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R GO; GO:0001518; C:voltage-gated sodium channel complex; IEA.

R GO; GO:0005261; F:cation channel activity; IEA.

R GO; GO:0005288; F:voltage-gated sodium channel activity; IEA.

R GO; GO:0005288; F:voltage-gated sodium channel activity; IEA.

R GO; GO:0006812; P:cation transport; IEA.

R GO; GO:0006814; P:sodium ion transport; IEA.

R InterPro; IPR001622; Ca/Na pore.

R InterPro; IPR001621; Car Channel_TrpL.

R InterPro; IPR000048; IO_region.

R InterPro; IPR0005820; M+channel.

R InterPro; IPR001626; Na_channel.

R InterPro; IPR010526; Na_channel.

R InterPro; IPR010526; Na_channel.

R Pfam: PP00520; Ion trans; 4.
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Sangameswaran L., Fish L.M., Koch B.D., Rabert D.K., Delgado i Ilnicka M., Jakeman L.B., Novakovic S., Wong K., Sze P., Tzou Stewart G.R., Herman R.C., Chan H., Eglen R.M., Hunter J.C.; "A novel tetrodotoxin-sensitive, voltage-gated sodium channel expressed in rat and human dorsal root ganglia.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SMART; SM00015; IQ; 1.

SMART; SM00015; IQ; 1.

Ion transport; Ionic channel; Sod

Transport; Voltage-gated channel.
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"Cloning of a
cells.";
                                                                                                                                     SEQUENCE FROM
                                                                                                                                                                                                                     Scn10a,
                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=97188502; PubMed=9037087; Toledo-Aral J.J., Moss B.L., He Z.J., Koszowski A.G., Whisenand Levinson S.R., Wolf J.J., Silos-Santiago I., Halegoua S., Mande Levinson S.R., Wolf J.J., a predominant voltage-dependent sodium expressed principally in peripheral neurons.., Proc. Natl. Acad. Sci. U.S.A. 94:1527-1532(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JUL-1997 (TrEMBLrel. 05-JUL-2004 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  008562;
01-JUL-1997
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                                                                                                                                                                                                                                                                                          MEDLINE=97007982; PubMed=8854872;
                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rattus norvegicus (Rat).
                                                                                                                                                                                                                                           "Genetic
                                                                                                                                                                                                                                                                    Kozak C.A., Sangameswaran
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PR00170;
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SIMILARITY: Belongs to the
IL; U35238; AAA89159.1; -
IP; P04775; 1BYY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Voltage-gated sodium channel) (Fragment).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PF00520; Ion trans; 4.
PF00612; IQ; 1.
PF06512; Na trans assoc;
S; PR00170; NACHANNEL.
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                                                                                                                                                                                 mapping of the peripheral in the mouse."; nome 7:787-788(1996).
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                                                                                                                               N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sci. U.S.A. 92:11034-11038(1995). OCATION: Integral membrane protein (elongs to the sodium channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 82.1%;
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04, Last sequence update)
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Pred. No.
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                                                                                                                                                                                                                                      sodium channel genes,
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s 0;
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                                                                          gado S.G.,
Tzoumaka
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Query Match
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Matches 22
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Best Local S
Matches 23
                                                                                                                                        SEQUENCE FROM N.A.

Lu Y., Lopreato G.F., Zakon H.H.;

Lu Y., Lopreato G.F., Zakon H.H.;

Submitted (DEC-2002) to the EMBL/GenBank/DDBJ data

EMBL; AY204537; AAO60425.1; -.

GO; GO:0016021; C:integral to membrane; IEA.

GO; GO:0005261; F:cation channel activity; IEA.

GO; GO:0006812; P:cation transport; IEA.

InterPro; IPR01682; Ca/Na pore.

InterPro; IPR01682; Ca/Na pore.

InterPro; IPR005820; M+channel nlg.

InterPro; IPR0105820; M+channel nlg.

InterPro; IPR010526; Na trans_assoc.

Pfam; PF06512; Na trans_assoc; 1.

Pfam; PF06512; Na trans_assoc; 1.
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HSSP; P04775; 1BYY.

GO; GO:0016021; C:integral to membrane; IEA.

GO; GO:0005281; F:catton channel activity; IEA.

GO; GO:0005281; F:voltage-gated sodium channel ac GO; GO:0005281; F:catton transport; IEA.

GO; GO:0006212; P:catton transport; IEA.

GO; GO:0006814; P:sodium ion transport; IEA.
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NON TER
SEQUENCE
                                                                                                       ION trai
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ictalurus punctatus (Channel catfish).
Eukaryota; Metazoa; Chordata; Craniata;
Actinopterygii, Neopterygii; Teleostei;
Ictaluridae; Ictalurus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sodium channel 6 (Fragment).
Ictalurus punctatus (Channel catfish)
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01-JUN-2003
                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=7998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR005820; InterPro; IPR001696;
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InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR00521; Ion trans.
InterPro; IPR000048; IO_region.
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                      Similarity
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  Conservative
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                                                                                   AA;
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                                                                                   53617
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                      100.0%;
                                       78.6%;
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                                                                                                                                                                                                                                                                                                                                                            Zakon H.H.;
to the EMBL/GenBank/DDBJ databases.
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                                                                                   WW;
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Last
                   Score 22;
Pred. No.
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Pred. No.
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                                                                                   D922504FD1C0DF1B CRC64;
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ium channel family.
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                      No.
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                   DB 2;
3e-12;
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Ostariophysi; Siluriformes;
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on update)
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                                         Length 473;
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DR GO; C
DR Inter
P SEQUENCE FROM N.A.

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X MEDLINE=21310016; PubMed=11416226;

X MEDLINE=21310016; Pication channel genes in vertebrates.",

X TEVOLUTION and divergence of sodium channel genes in vertebrates.",

X TEVOLUTION and divergence of sodium channel genes in vertebrates.",

X TEVOLUTION and divergence of sodium channe; IEA.

DR GO; GO:0016912; C:integral to membrane; IEA.

DR GO; GO:0005261; Fication channel activity; IEA.

DR GO; GO:0006812; Pication transport; IEA.

DR GO; GO:0006812; Pication transport; IEA.

DR InterPro; IPR001682; CalMa pore.

DR InterPro; IPR001682; CalMa pore.

DR InterPro; IPR001612; Calmanel_TrpL.
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L Y., Lopreato G.F., Zakon H.H.;

L Submitted (DEC-2002) to the EMBL/GenBank/DDBJ databases.

EMBL; AY204535; AA060423.1; -.

R GO; GO:0016021; C:integral to membrane; IEA.

R GO; GO:0005261; F:cation channel activity; IEA.

R GO; GO:0006812; P:cation transport; IEA.

R GO; GO:0006812; P:cation transport; IEA.

R InterPro; IPR001682; Ca/Na_pore.

InterPro; IPR005821; Ion trans.

InterPro; IPR005821; Ma_trans_

InterPro; IPR010586; Na_trans_

INTERPOO; IPR010586;
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Q90Z27;
Q90Z27;
01-DEC-2001 (TrEMBLrel. 19, Cr
01-DEC-2001 (TrEMBLrel. 19, La
01-MAR-2004 (TrEMBLrel. 26, La
Sodium channel 4 (Fragment).
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O1-JUN-2003 (TrEMBLrel. 24, Created)
O1-JUN-2003 (TrEMBLrel. 24, Last sequence update)
O1-JUN-2003 (TrEMBLrel. 26, Last annotation update)
O1-MAR-2004 (TrEMBLrel. 26, Last annotation update)
Sodium channel 4 (Fragment).
ICtalurus punctatus (Channel catfish).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Actinopterygii; Neopterygii; Teleostei; Ostariophys.
Ictaluridae; Ictalurus.
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Bukaryota; Metazoa; Chordata; Craniata;
Actinopterygii; Neopterygii; Teleostei;
Sternopygidae; Sternopygus.

NCBI_TaxID=77841;
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ALIGNMENTS

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; Sequence 7, Application US/09457571 ; Patent No. 6703486
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/836,325
FILING DATE: 2-MAY-1997
CLASSIFICATION: 514
PRIOR APPLICATION NUMBER: PCT/US95/14251
APPLICATION NUMBER: PCT/US95/14251
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
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Patent No. 6110672
                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: 202-371-2540 INFORMATION FOR SEQ ID NO: 7:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334,029
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION:
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TITLE OF INVENTION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                           STRANDEDNESS: single TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 0917.0240002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 1100 New CITY: Washington
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                                                                                                        28;
                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                          amino acid
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                                                                                                                                                                                                                                                                                                                                               2005 amino acids
                                                                                                                                                                               100.0%; Score 28; DB 3; 1 ilarity 100.0%; Pred. No. 1.1e-18; Conservative 0; Mismatches 0;
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Halegoua, Simon
Borden, Laurence A.
                                                                                                                                                                                                                                                                                                                                                                                                                      202-371-2600
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Sodium Channels, DNA Encoding Therefor, Crystallization,
X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and Using
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                                                                      APPLICANT:
APPLICANT:
                                 APPLICANT:
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NAME:

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Query Match Best Local (Matches

TYPE:

RESULT 2

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; TOPOLOGY: linear; MOLECULE TYPE: peptide US-09-457-571-7
                                                                                                                                      Sequence 9, Application US/09024020B Patent No. 6030810 GENERAL INFORMATION:
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FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION NUMBER: 08/334,029
APPLICATION NUMBER: 08/334,029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: 202-371-2540 INFORMATION FOR SEQ ID NO: 7:
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APPLICANT: Mandel
APPLICANT: Halegon
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TITLE OF INVENTION: Sed
TITLE OF INVENTION: S-A
TITLE OF INVENTION: X-x
TITLE OF INVENTION: Dru-
TITLE OF INVENTION: The
NUMBER OF SEQUENCES: 19
CORRESPONDENCE ADDRESS:
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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LENGTH: 2005 amino aci
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TELECOMMUNICATION INFORMATION:
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ATTORNEY/AGENT INFORMATION:
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APPLICATION NUMBER:
FILING DATE: 02-MAY-
PRIOR APPLICATION DATA:
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
         TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Ludwig, Steven R.
NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/0 FILING DATE: 09-DEC-1999 CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 1100 New CITY: Washington
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STREET: 1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                               959 CLTVFMMVMVIGNLVVLNLFLALLLSSF 986
                                                                                                                                                                                                                                                                                                                      1 CLTVFMMVMVIGNLVVLNLFLALLLSSF 28
                                                                                                                                                                                                                                                                                                                                                                                   Similarity 100.
28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2005 amino acids
                                                                  DELGADO, STEPHEN
DIETRICH, PAUL S
FISH, LINDA M.
HERMAN, RONALD C.
SANGAMESWARAN, LAKSHMI
VENTION: NOVEL CLONED TETRODOTOXIN-SENSITIVE
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02-MAY-1997
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                                                                                           PAUL S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCT/US95/14251
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION UNMBER: US 60/039,447
FILING DATE: 26-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: CLARK, JANET P.
REGISTRATION NUMBER: 34,799
REFERENCE/DOCKET NUMBER: R0020B-REG
TELECOMMUNICATION INFORMATION:
TELECPHONE: (650) 852-3097
                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: DELGAD
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INFORMATION FOR SEQ ID NO: 9
SEQUENCE CHARACTERISTICS:
LENGTH: 1976 amino acids
                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: JANET PAULINE CLARK
STREET: 3401 HILLVIEW AVENUE, MS A2-250
                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/024,020B
FILING DATE: 16-FEB-1998
CLASSIFICATION: 536
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                  TITLE OF INVENTION:
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MEDIUM TYPE: Floppy disk
                   SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                   STREET: 330...
CITY: PALO ALTO
                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                         APPLICANT:
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NUMBER OF SEQUENCES:
                                                                                                                                COUNTRY: U.S.A. ZIP: 94304-1397
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TOPOLOGY: lir
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ZIP: 94304-1397
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                                                                                                                                                                                                                                                                              SANGAMESWARAN, LAKSHMI
VENTION: NOVEL CLONED TETRODOTOXIN-SENSITIVE
VENTION: SODIUM CHANNEL I-SUBUNIT AND A SPLICE VARIANT THEREOF
                                                                                                                                                                                                                                                                                                                                        HERMAN, RONALD C.
                                                                                                                                                                                                                                                                                                                                                          DIETRICH, PAUL S. FISH, LINDA M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
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                                                                                                                                                                                                                                                                                                                                                                                               DELGADO, STEPHEN G.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        89.3%; Score 25; DB 3;
100.0%; Pred. No. 8.6e-16
ltive 0; Mismatches 0
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US/09/425,043
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
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Best Local Similarity
                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: PatentIn Release #1.0, Vers
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/024,020B
                                                                    CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/039,447
FILING DATE: 26-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: CLARK, JANET P.
REGISTRATION NUMBER: 34,799
REGISTRATION NUMBER: 80020B-REG
TELECOMMUNICATION INFORMATION:
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FILING DATE: 16-FEB-1998
APPLICATION NUMBER: US 60/039,447
FILING DATE: 26-FEB-1997
ATTORNEY,AGENT INFORMATION:
NAME: CLARK, JANET P.
REGISTRATION NUMBER: 34,799
REFERENCE/DOCKET NUMBER: R0020B-REG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
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INFORMATION FOR SEQ ID NO:
TELEFAX: (650) 855-5322 INFORMATION FOR SEQ ID NO: 3: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: JANET PAULINE CLARK
STREET: 3401 HILLVIEW AVENUE, MS A2-250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: SANGAMESWARAN, LAKSHMI
TITLE OF INVENTION: NOVEL CLONED TETRODOTOXIN-SENSITIVE
TITLE OF INVENTION: SODIUM CHANNEL I-SUBUNIT AND A SPLICE VARIANT THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: DELGADO, APPLICANT: DIETRICH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 1976 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
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                                                                                                                                                                                                                                                  APPLICATION NUMBER: FILING DATE: 16-FE
                                                                                                                                                                                                                                                                                                                                                                                                           STATE: CA
COUNTRY: U.S.A.
ZIP: 94304-1397
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CITY: PALO ALTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: amino acid
STRANDEDNESS: si
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CLASSIFICATION:
                                                          TELEPHONE:
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                                                          (650)
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ID NO: 9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RONALD C
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100.0%; Pred. No. 8.6e-16;
                                                          852-3097
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                                                                                                                                                                                                                                                                                                             Version #1.30
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                                                                                                                    US-09-425-043-3
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Best Local S
                                                          Matches
                                                                                       Query Match
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                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 09/024,020
FILING DATE: 16-FEB-1998
APPLICATION NUMBER: US 60/039,447
FILING DATE: 26-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: CLARK, JANET P.
REGISTRATION NUMBER: 34,799
REFERENCE/DOCKET NUMBER: R0020B-REG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                              LENGTH: 1978 amino acid
TYPE: amino acid
STRANDEDNESS: sinc
TOPOLOGY: linear
MOLECULE TYPE: pept:
                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
CLASSIFICATION DATA:
PRIOR APPLICATION NUMBER: US 09/024,020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: JANET PAULINE CLARK
STREET: 3401 HILLVIEW AVENUE, MS A2-250
                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 852-3097
TELEFAX: (650) 855-5322
                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/425,043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
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                                                                       Local
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                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: U.S.A. ZIP: 94304-1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25;
                4 VFMMVMVIGNLVVLNLFLALLLSSF 28
                                                          25;
                                                                         Similarity
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 VFMMVMVIGNLVVLNLFLALLLSSF 978
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                                                                                                                                                                                       1978 amino acids
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VENTION: NOVEL CLONED TETRODOTOXIN-SENSITIVE
VENTION: SODIUM CHANNEL I-SUBUNIT AND A SPLICE VARIANT THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HERMAN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DELGADO, STEPHEN G. DIETRICH, PAUL S.
                                                           Conservative
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                                                                                                                                peptide
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                                RONALD C.
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Pred. No. 8.6e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                     DB 3;
                                                                         8.6e-16;
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                                                                                                                                                                                   Sequence 4, Application US/09425043 Patent No. 6335172
                                                                                                                                                                                                                                                                                                                                                                           Matches
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/09/024,020B
FILING DATE: 16-FEB-1998
CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/039,447
FILING DATE: 26-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: CLARK, JANET P.
REGISTRATION NUMBER: 34,799
REFERENCE/DOCKET NUMBER: R0020B-REG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: DELGAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (650) 855-53
INFORMATION FOR SEQ ID NO:
                                                                                                                                                GENERAL INFORMATION:
APPLICANT: DELGAD
                           APPLICANT: DIETRICH, PAUL S.
APPLICANT: FISH, LINDA M.
APPLICANT: HERMAN, RONALD C.
APPLICANT: SANGAMESWARAN, LAKSHMI
TITLE OF INVENTION: NOVEL CLONED TETRODOTOXIN-SENSITIVE
TITLE OF INVENTION: SOLUM CHANNEL I-SUBUNIT AND A SPLICE VARIANT THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 37. CITY: PALO ALTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
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APPLICANT: SANGAMESWARAN, LAKSHMI
TITLE OF INVENTION: NOVEL CLONED TETRODOTOXIN-SENSITIVE
TITLE OF INVENTION: SODIUM CHANNEL I-SUBUNIT AND A SPLICE VARIANT THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION: TELEPHONE: (650) 852-3097
                 NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
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                                                                                                                                                                                                                                                                                                    964 VFMMVMVIGNLVVLNLFLALLLSSF 988
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                                                                                                                                                                                                                                                                                                                                                                           89.3%; Score 25; DB ilarity 100.0%; Pred. No. 8.0 Conservative 0; Mismatches
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linear
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                                                                                                                                              DELGADO,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JANET PAULINE CLARK
                                                                                                                                                STEPHEN G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STEPHEN G.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/09/024,020B
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                                                                                                                                                                                                                                                                                                                                                                                                DB 3; L
. 8.6e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                Length 1988;
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ADDRESSEE: JANET PAULINE CLARK STREET: 3401 HILLVIEW AVENUE, MS A2-250 CITY: PALO ALTO STATE: CA

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RESULT 9
US-08-836-325-15
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APPLICANT: Mandel, Gail
APPLICANT: Malegoua, Simon
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral N
TITLE OF INVENTION: Sodium Chann
TITLE OF INVENTION: X-ray Diffra
TITLE OF INVENTION: Drug Design,
TITLE OF INVENTION: Thereof
NUMBER OF SEQUENCES: 19
CORRESSPONDENCE ADDRESS:
ADDRESSES STERME, KESSLER GO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-425-043-4
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FILING DATE: 16-FEB-1998
APPLICATION NUMBER: US 60/039,447
FILING DATE: 26-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: CLARK, JANET P.
REGISTRATION NUMBER: 34,799
REFERENCE/DOCKET NUMBER: R0020B-REG
TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 852-3097
TELEPHONE: (650) 852-3097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPAX: (650) 855-5322
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 1988 amino acids
                                                          COUNTRY: USA
ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
COTTANDE: Patrill PS-DOS/MS-DOS
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MEDIUM TYPE: Floppy disk
                   SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                           STATE:
                                                                                                                                                                                                                               STREET: 1100 New CITY: Washington
                                                                                                                                                                                                                                                     ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
STREET: 1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          964 VFMMVMVIGNLVVLNLFLALLLSSF 988
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                                                                                                                                                                                                                                                                                                                                                                    Peripheral Nervous System Specific
Sodium Channels, DNA Encoding Therefor, Crystallization,
X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and Using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          89.3%; Score 25; DB 3; L
100.0%; Pred. No. 8.6e-16;
US/08/836,325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/09/425,043
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; MOLECULE TYPE: protein
US-08-836-325-15
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                                                                                                                                                                          COUNTRY: USA
ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/457,571
FILING DATE: 09-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 82.1%; Score 23; DB Best Local Similarity 100.0%; Pred. No. 6.7 Matches 23; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Mandel, Gai
APPLICANT: Halegoua, S
TITLB OF INVENTION: PARTITLE OF INVENTION: SC
TITLE OF INVENTION: X-
TITLE OF INVENTION: X-
TITLE OF INVENTION: DI
TITLE OF INVENTION: THE OF SECURIORS: 1
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APPLICATION NUMBER: 08/836
FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 0917.0240002
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION 202-371-2600
                                                                                                                                     CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 08/334,029
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                   STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: STERNE, KESSLER,
STREET: 1100 New York Ave.,
                                                                                                                                                                                                                                                                                                                                                                                                   CITY: Washington
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               882 MYVMVIGNLVVLNLFLALLLSSF 904
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o. 6703486
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peripheral Nervous System Specific
Sodium Channels, DNA Encoding Therefor, Crystallization,
X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and U
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                                                                                                                      08/836,325
                                                          PCT/US95/14251
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N. W., Suite 600
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08/482,401

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RESULT 11
US-08-836-325-16
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-260
TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 1835 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 16,
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                               PRIOR APPLICATION DATA;

PRIOR APPLICATION DATA;

APPLICATION NUMBER: 08/334,02

PILING DATE: 02-NOV-1994

ATTORNEY/AGENT INFORMATION:

NAME: Ludwig, Steven R.

REGISTRATION NUMBER: 36,203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: Mandel
                                                                                                                                                                APPLICATION NUMBER: PCT/US
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482
FILING DATE: 07-UN-1995
                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/836,325
FILING DATE: 2-MAY-1997
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESSE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
STREET: 1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and UTITLE OF INVENTION: Thereof
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
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ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Washington
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TOPOLOGY: not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
                      REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23; Conservative
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                                                                                                                                                                                            08/482,401
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                                                                                                                              08/334,029
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                    0917.0240002
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Best Local Similarity 100.0%; Pred. No. 7.2e-14;
Matches 23; Conservative 0; Mismatches 0;
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INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
                                                                 TELEFAX: 202-371-2540 INFORMATION FOR SEQ ID NO: 16:
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APPLICANT: Halegoua, S
TITLE OF INVENTION: SC
TITLE OF INVENTION: SC
                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION DATA:
PRIOR APPLICATION UNMBER: 08/836,325
APPLICATION NUMBER: 08/836,325
FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: PCT/US95/14251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: FORM:
MEDIUM TYPE: FORM:
COMPUTER: IBM PC compatible
COMPUTER: PATEN: PC-DOS/MS-DOS
SOFTMARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION DATA:
APPLICATION UMBER: US/09/457,571
FILING DATE: 09-DEC-1999
CLASSIFICATION: 514
SEQUENCE CHARACTERISTICS:
LENGTH: 1969 amino acids
TYPE: amino acid
                                                                                                                        ATTORNEY AGENT INFORMATION:
NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                              FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/3
FILING DATE: 02-NOV-1994
                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: PCT/US95/1-
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEB: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C STREET: 1100 New York Ave., N. W., Suite 600
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STRANDEDNESS: no
TOPOLOGY: linear
                                                                                                          TELEPHONE:
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Sodium Channels, DNA Encoding Therefor, Crystallization,
X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and Using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Simon
                                                                                                                                                                                                                                                                   08/334,029
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STRANDEDNESS:

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FEATURE:
; NAME/KEY; misc_feature
; OTHER INFORMATION: Incyte ID No. 6673549 1719478CD1
US-09-976-594-757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; TOPOLOGY: linear; MOLECULE TYPE: protein US-09-457-571-16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-976-594-757
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Best Local S
Matches 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Furness, Michael
APPLICANT: Buchbinder, Jenny
APPLICANT: Buchbinder, Jenny
TITLE OF INVENTION: GENES EXPRESSED IN C3A LIVER CELL CULTURES TREATED WITH STEROIDS
FILE REFERENCE: PA-0041 US
CURRENT EPILION NUMBER: US/09/976,594
CURRENT FILING DATE: 2001-10-12
PRIOR APPLICATION NUMBER: 60/240,409
PRIOR APPLICATION NUMBER: 60/240,409
PRIOR FILING DATE: 2000-10-12
NUMBER OF SEQ ID NOS: 1143
SOFTWARE: PERL Program
SEQ ID NO 757
SEQ ID NO 757
                                                                                                                                                                                           NUMBER OF SEQ ID NOS: 401
SOPTWARE: PERL Program
SEQ ID NO 367
LENGTH: 1977
                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 367, Application US/09919039
Patent No. 6727066
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
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                                       Query Match
                                                                               NAME/KEY: misc feature
OTHER INFORMATION: Incyte ID No. 6727066 1719478CD1
-09-919-039-367
                                                                                                                                                                                                                                                                  CURRENT APPLICATION NUMBER: US/09/919,039
CURRENT FILING DATE: 2002-09-09
PRIOR APPLICATION NUMBER: 60/222,113
PRIOR FILING DATE: 2000-07-28
                                                                                                                                                                                                                                                                                                                                           APPLICANT: Kaser, Matthew R.
TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES
FILE REFERENCE: PA-0035 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No.
                                                                                                                                                        ORGANISM: Homo sapiens
                                                                                                                                                                             TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 1977
TYPE: PRT
                                                                                                                                        FEATURE:
y Match 82.1%; Score 23; DB 4; Length 1977; Local Similarity 100.0%; Pred. No. 7.2e-14; hes 23; Conservative 0; Mismatches 0; Indels
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23; Conservative
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100.0%; Pred. No. 7.
Ltive 0; Mismatches
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100.0%; Pred. No.
tive 0; Mismatci
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hes 0;
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7.2e-14;
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US-08-836-325-10
                                                                       Query Match
Best Local Similarity
Matches 23; Conserv
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                                                                                                                                                                                                                                                                           TELEFAX: 202-371-2540 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                        PILING DATE: 02-NOV-1995

PRIOR APPLICATION DATA:
APPLICATION UMBER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION DATA: 08/334,029
FILING DATE: 02-NOV-1994
ATTORNEY/ACENT INFORMATION:
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APPLICANT: Halegoua, Simon
APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 514
PRIOR APPLICATION NUMBER: PCT/US95/14251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA: APPLICATION MUMBER: US/08/836,32: FILING DATE: 2-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
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                                                                                                                                                                                                TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                       NAME: Ludwig, Steven R. REGISTRATION NUMBER: 36, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
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948 MMVMVIGNLVVLNLFLALLLSSF 970
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                                                                       82.1%; Score 23; DB
100.0%; Pred. No. 7.:
tive 0; Mismatches
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N. W., Suite 600
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. 7.2e-14;
                                                                                                              Length 1984;
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RESULT 16 US-09-457-571-10

Sequence 10, Application US/09457571 Patent No. 6703486 GENERAL INFORMATION:

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GENERAL INFORMATION:
APPLICANT: Mandel, Gail
APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral N
TITLE OF INVENTION: Sodium Chan
TITLE OF INVENTION: X-ray Diffran
TITLE OF INVENTION: Drug Design,
TITLE OF INVENTION: Thereof
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIA Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/457,571
FILING DATE: 09-DEC-1999
CLASSIFICATION DATA:
APPLICATION NUMBER: 08/836,325
FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/14251
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-UTW-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334,029
FILING DATE: 07-UTW-1995
PRIOR APPLICATION NUMBER: 08/334,029
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 0917.0240003
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
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Patent No. 6110672
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APPLICANT: Halegoua,
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
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CORRESPONDENCE ADDRESS,
ADDRESSEE: STERNE, KESSLER,
STREET: 1100 New York Ave.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: protein
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CITY: Washington
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GY: linear
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ilarity 100.0%; Pred. No. 7.2e-14;
Conservative 0; Mismatches 0;
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Peripheral Nervous System Specific
Peripheral Nervous System Specific
Sodium Channels, DNA Encoding Therefor, Crystallization,
Sodium Channels, DNA Encoding Therefor, Crystallization,
Sodium Channels, DNA Encoding Therefore
The Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and Using
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         Peripheral Nervous System Specific Sodium Channels, DNA Encoding Therefor, Crystallization, X-ray Diffraction, Computer Molecular Modeling, Rational Drug Design, Drug Screening, and Methods of Making and Using Thereof
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N. W., Suite 600
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US-08-836-325-12
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Best Local :
                                                                                                                                                                                                                                                                                                                                                                  Sequence 12, Application US/08836325 Patent No. 6110672
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REGISTRATION NUMBER: 36,203
REFERENCE/FOCKET NUMBER: 091'
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
TELEFAX: 202-371-2540
                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Mandel, Gail
APPLICANT: Halegoua, Si
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INFORMATION FOR SEQ ID NO: 11:
                                                                                                                                                                           APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral N
TITLE OF INVENTION: Sodium Chann
TITLE OF INVENTION: X-ray Diffra
TITLE OF INVENTION: Drug Design,
TITLE OF INVENTION: Thereof
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COREATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334,029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: not relevant
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
NAME: Ludwig, Steven R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 1989 amino acids
                                                                                                                                     NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
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COMPUTER READABLE FORM:
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ZIP: 20005-3934
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es 23; Conserv
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                                                                                                                      ADDRESSEE:
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1100 New York Ave., N. W., Suite 600
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1100 New York Ave.,
                                      USA
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100.0%; Pred. No.
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                                                                                                                                                                                                 Peripheral Nervous System Specific Sodium Channels, DNA Encoding Therefor, Crystallization, Sodium Channels, DNA Encoding Therefor, Crystallization, X-ray Diffraction, Computer Molecular Modeling, Rational Drug Design, Drug Screening, and Methods of Making and Using
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                                                                                                  GOLDSTEIN & FOX P.L.L.C
N. W., Suite 600
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7.2e-14;
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Floppy disk

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// MOLECULE TYPE: protein
US-08-836-325-12
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
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                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                               ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
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REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                      SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US
FILING DATE: 09-DEC-19
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PRIOR APPLICATION NUMBER: I
                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
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                                                                                                                                                                                                                                                                                        STREET:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 08/4 FILING DATE: 07-JUN-1995
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                                                                                                                                                                                                                                                                                                              ADDRESSEE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE:
COMPUTER: IF
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                                                                                                                                                                                                                                                                      Washington
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1100 New York Ave., N. W., Suite 600
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                                                                                                               PatentIn Release #1.0, Version #1.30
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                                                        09-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  02-NOV-1995
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                                                                                                                                                                                                                                                                                                                                                                 Peripheral Nervous System Specific Sodium Channels, DNA Encoding Therefor, Crystallization, X-ray Diffraction, Computer Molecular Modeling, Rational Drug Design, Drug Screening; and Methods of Making and Using Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        82.1%; Score 23; DB 3; Length 1989; 100.0%; Pred. No. 7.2e-14; tive 0; Mismatches 0; Indels
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08/836,325
                                                                          US/09/457,571
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; MOLECULE TYPE: protein
US-09-457-571-11
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                                                                                    FILING DATA:
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,325
APPLICATION 02-MAY-1997
                                                                                                                                                                                                                                                                                                    ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Modecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-2600
            FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
                                                            PRICATION DATE: 02-MAY-1997
PRIOR APPLICATION NUMBER: PCT/US95/14251
APPLICATION NUMBER: PCT/US95/14251
                                                                                                                                                                                                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
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APPLICATION NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: STERNE, KESSLER, STREET: 1100 New York Ave.,
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                                                                                                                                                                                                                                                                                                                                                                    USA
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07-JUN-1995
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100.0%; F1
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N. W., Suite 600
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MOLECULE TYPE: protein US-09-457-571-12
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APPLICANT: Silos-Santiago, Inmaculada
APPLICANT: Silos-Santiago, Inmaculada
APPLICANT: GL, Wei
APPLICANT: GL, Wei
PILE OF INVENTION: NOVEL HUMAN ION CHANNEL AND TRANSPORTER FAMILY MEMBERS
PILE OF INVENTION NUMBER: US/10/162,012
CURRENT APPLICATION NUMBER: US/0/209,845
PRIOR APPLICATION NUMBER: US/0/209,845
PRIOR APPLICATION NUMBER: US/0/29/5,321
PRIOR APPLICATION NUMBER: US/0/875,321
PRIOR APPLICATION NUMBER: US/0/875,321
PRIOR APPLICATION NUMBER: US/0/875,321
PRIOR APPLICATION NUMBER: US/0/875,321
PRIOR FILING DATE: 2001-06-06
PRIOR FILING DATE: 2001-06-06
PRIOR APPLICATION NUMBER: US/0/209,257
PRIOR APPLICATION NUMBER: US/0/209,257
PRIOR FILING DATE: 2001-06-06
PRIOR FILING DATE: 2001-06-06
PRIOR FILING DATE: 2001-06-06
PRIOR FILING DATE: 2001-06-05
PRIOR FILING DATE: PCT/US01/18398
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US-10-162-012-24
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REGISTRATION NUMBER: 0917
REFERENCE/DOCKET NUMBER: 0917
REFERENCE/DOCKET NUMBER: 0917
RELECOMMUNICATION INFORMATION: 202-371-2540
TELEPAX: 202-371-2540
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INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
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patent No. 6682597
patent NFORMATION:
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APPLICATION NUMBER:
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ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: PCT/USO1/18398
PRIOR FILING DATE: 2001-06-05
PRIOR APPLICATION NUMBER: US 60/209,238
PRIOR FILING DATE: 2000-06-05
PRIOR PELLING DATE: 2000-06-05
PRIOR PILING DATE: 2001-06-05
PRIOR PILING DATE: 2001-06-05
PRIOR APPLICATION NUMBER: US 09/875,363
PRIOR APPLICATION NUMBER: PCT/USO1/18247
PRIOR APPLICATION NUMBER: DATE: 2001-06-05
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STRANDEDNESS: not
TOPOLOGY: not rela
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                                                                     ICR FILING DATE: 2001-08-13
ICR PELICATION NUMBER: PCT/US01/25475
ICR APPLICATION NUMBER: PCT/US01/25475
ICR FILING DATE: 2001-08-15
ICR APPLICATION NUMBER: US 60/226,770
ICR APPLICATION NUMBER: US 09/934,421
ICR APPLICATION NUMBER: US 09/934,421
ICR APPLICATION NUMBER: US 09/934,221
ICR APPLICATION NUMBER: PCT/US01/26096
ICR APPLICATION NUMBER: PCT/US01/26096
ICR APPLICATION NUMBER: PCT/US01/26096
ICR APPLICATION NUMBER: US 09/934,281
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23; Conservative
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                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US 60/227,068
PILING DATE: 2000-08-22
APPLICATION NUMBER: US 09/928,530
APPLICATION NUMBER: US 09/928,530
APPLICATION NUMBER: US 60/279,281
FILING DATE: 2001-03-28
POLICATION NUMBER US 10/109,029
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100.0%; Pred. No. 7.2e-1
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PRIOR FILING DATE: 2002-03-28
PRIOR APPLICATION NUMBER: PCT/US02/09728
PRIOR FILING DATE: 2002-03-28
PRIOR APPLICATION NUMBER: US 60/290,288
PRIOR FILING DATE: 2001-05-11
PRIOR APPLICATION NUMBER: US (not assigned)
PRIOR FILING DATE: 2002-05-13
PRIOR FILING DATE: 2002-05-13
PRIOR FILING DATE: 2002-05-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
ORGANISM: Homo sapiens
US-10-162-012-24
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SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 24
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US-09-562-737-81
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
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SEQ ID NO 81
LENGTH: 1024
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US-09-634-920-4
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APPLICANT: Gotthardt, Michael
APPLICANT: Gotthardt, Michael
TITLE OF INVENTION: LDL Receptor Signaling Pathways
TITLE OF INVENTION: UNSUBER: US/09/562,737
CURRENT APPLICATION NUMBER: US/09/562,737
CURRENT FILING DATE: 2000-05-01
CURRENT FILING DATE: 2000-05-01
NUMBER OF SEQ ID NOS: 132
NUMBER OF SEQ ID NOS: 132
SOFTWARE: Patentin Ver. 2.1
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Best Local S
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FILLE EXPERENCE: 2323-155
FILE REFERENCE: 2323-155
CURRENT APPLICATION NUMBER: US/09/634,920
CURRENT FILING DATE: 2000-08-09
CURRENT FILING DATE: 60/190,057
PRIOR APPLICATION NUMBER: 60/147,49
PRIOR APPLICATION NUMBER: 60/147,49
PRIOR APPLICATION NUMBER: 60/147,49
PRIOR FILING DATE: 1999-08-09
PRIOR PRIOR PRIOR DESCRIPTION NOS: 4
NUMBER OF SEQ ID NOS: 4
                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                           Sequence 4, Appl
Patent No. 63423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT ORGANISM: Artificial Sequence
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APPLICANT: Keating, Mark T.
APPLICANT: Keating, Mark T.
APPLICANT: Keating, Mark T.
TITLE OF INVENTION: SCUSA AND METHODS FOR DETECTING.
TITLE OF INVENTION: SCUSA AND METHODS FOR DETECTING.
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22; Conserv
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Conservative 0;
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                                                                                                                                                                                                                                                                                                      Application US/09634920
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RESULT 25
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US-09-514-907A-2
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LENGTH: 2016
              Sequence 2, Application US/09896994 Patent No. 6665563
GENERAL INFORMATION:
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GENERAL INFORMATION:
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Best Local Similarity
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SEQUENCE CHARACTERISTICS:
LENGTH: 2016 amino acids
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ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: Paul K. Legaard
REGISTRATION NUMBER: 38,534
REFERENCE/DOCKET NUMBER: MEDT-0029/P-3586
TELECOMMUNICATION INFORMATION:
TELEPHONE: (215) 568-3100
TELEPAX: (215) 568-3439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/514,907A
FILING DATE: 08-Feb-2000
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 19103
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                     STRANDEDNESS: single
TOPOLOGY: unknown
SEQUENCE DESCRIPTION: SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Kenneth B. Stokes
Jos,e Morissette
TITLE OF INVENTION: SYSTEMS FOR ENHANCING CARDIAC SIGNAL
SENSING BY CARDIAC PACEMAKERS THROUGH
GENETIC TREATMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Woodcock Washburn Kurtz Mackiewicz & No. 6567705ris LLP
STREET: One Liberty Place - 46th Floor
APPLICANT: Ken Stokes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 12
                                                                                                                                      922
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                                                                                                                                                                                                                       Similarity
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                                                                                                                                                                                                                                                                                                                                          TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Philadelphia
                                                                                                                                                                                                     Conservative
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Search completed: January 27, 2005, 17:54:18 Job time: 23.5 secs
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SEQUENCE CHARACTERISTICS:
ENGTH: 2016 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION UNMBER: 09/514,907
APPLICATION UNMBER: 09/514,907
FILING DATE: <Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: Paul K. Legaard
REGISTRATION NUMBER: 39,534
REFERENCE/DOCKET NUMBER: MEDT-0029/P-3586
TELEPRONGE: (215) 568-3100
TELEPRONE: (215) 568-3100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: WordPerfect 6.1

CURRENT APPLICATION NUMBER: US/09/896,994

FILING DATE: 02-Jul-2001

CLASSIFICATION: CURknown>
                                                                                                                                                                                 Tocal Similarity 100.0%; Score 21; DB 4; Local Similarity 100.0%; Pred. No. 6.1e-12; Pes 21; Conservative 0. Mismath.
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TITLE OF INVENTION: SYSTEMS AND METHODS FOR ENHANCING CARDIAC
SIGNAL SENSING BY CARDIAC PACEMAKERS THRO
                                                                                                                                                                                                                                                                                                               SEQUENCE DESCRIPTION: SEQ ID NO: 2:
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                                                                                                922 VMVIGNLVVLNLFLALLLSSF 942
                                                                                                                    8 VMVIGNLVVLNLFLALLLSSF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Woodcock Washburn Kurtz Mackiewicz and No. 6665563ris STREET: One Liberty Place - 46th Floor CITY: Philadelphia
                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS: single TOPOLOGY: unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: PA
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Perfect score:
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Aar99640 Periphera
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New INPIONCH05 and INPIONCH06 polypeptides, useful as a contraceptive agent, or for diagnosing and treating a disease or disorder, e.g. infertility, neurological disorder, cardiovascular disorder, autoimmune

24-MAY-2002; 2002GB-00012067 23-MAY-2003; 2003WO-GB002270

2004-053233/05

Michalovich D,

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Reynolds

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Example 1; Fig 2; 96pp; English

The present invention describes cation channel polypeptides (I), termed CC INPIONCHO5 and INPIONCHO6. Also described: (1) a purified nucleic acid CC molecule (II), which: (a) encodes (I); or (b) hybridises under high CC comprising (II); (3) a host cell transformed with the vector; (4) a comprising (II); (3) a host cell transformed with the vector; (4) a specifically to, and which preferably inhibits the activity of (I) or the CC decreases the level of expression or activity of (I) or the tetrameric cation channel; (6) a compound that either increases or cation channel; (7) a method of diagnosing a disease in a patient; (8) a comprising (I) or (II); (10) a method of treating a disease in a patient; (10) a method of treating a disease in a patient; (11) a method of treating a disease in a patient; (12) a method for the identification of a compound that is compound; (11) a method of or the identification of a compound that is compound; (12) a method for the identification of a compound that is compound; (12) a method for the identification of a disease/disorder; (13) compound; (12) a method for the identification of a compound that is compound; (12) a method for the identification of a disease/disorder; (13) compound; (12) a method for the identification of a compound that is compound; (12) a method for the identification of a disease/disorder; (13) compound; (14) a transgeric or and a reagent useful for the detection of a binding reaction between the compound that is compound; (12) a method for the detection of a binding reaction channel, compound that is compound; (13) compound; (14) a transgeric or compound that is compound; (14) a transgeric or compound that is compound; (15) compound; (16) compound; (17) compound; (18) compound; (19) compound; cerebroprotective, vasotropic and contraceptive activities, used in vaccines. (I), (II), vectors, tetrameric cation char ligands, compounds, or compositions of the present invention tetrameric cation channels may be used

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MYLYFVIFIIFGSFFTLNLFIGVIIDNF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MYLYFVIFIIFGSFFTLNLFIGVIIDNF 273
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ilarity 100.0%;
Conservative (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ion channel; ion channel subunit; ICS; nootropic;
i inotropic; antipyretic; antiarrhythmic; antimigr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       subunit mutant SEQ
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Pred. No. 2.4e-21;
Mismatches 0;
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Mulley JC, he 18-JUL-2001; 2001AU-00006452. 05-MAR-2002; 2002AU-00000910. 13-MAY-2002; 2002AU-00002292. 08-JUL-2002; 2002WO-AU000910. (BION-) BIONOMICS LTD. (WALL/) WALLACE R W. Harkin larkin LA, Scheffer Dibbens IE; ľW, Phillips HΑ, Heron SE

2003-239332/23. DB; ADB78635.

Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene events.

SEQ ID NO 140; 106pp; English.

The invention relates to a novel method for identifying a subject predisposed to a disorder associated with ion channel dysfunction. The method comprises ascertaining if at least one of the genes encoding ion channel subunits (ICS) has undergone a mutation event so that a cDNA derived from the subject has any of 134 nucleotide sequences. The method of the invention has nootropic, neuroprotective, inotropic, antipyretic, antiarrhythmic, antimigraine, antidepressant, antiparkinsonian,

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RESULT 3
ADES7388
ID ADES
XX ADES
AC ADES
XX ADES
XX ADES
XX ADES
XX Huma
XX Huma
XX Homc
XX Hom
PH 11-1
PR 25-1
PR 25-1
PR 26-1
PR 26
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Best Local
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(FARB )
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01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human;
                                                                                                                            The invention discloses a composition comprising
                                                                                                                                                                                           Claim 1; Page; 1017pp;
                                                                                                                                                                                                                                                        New composition comprising two or more isolated polypeptides, useful for preparing a medicament for treating pain in an animal.
                                                                                                                                                                                                                                                                                                                                                         GENBANK;
                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2003-268312/26
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Woolf C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14-AUG-2002; 2002WO-US025765.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human Protein XP_008249,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-JAN-2004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1459 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pain; neuronal tissue; gene therapy;
segmental nerve injury; chronic constriction injury; CCI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nerve injury; SNI; Chung.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GEN HOSPITAL CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BAYER AG.
                                                                                                                                                                                                                                                                                                                                                  XP_008249.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    D'urso D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       Befort
                                                                                                                                                                                               English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 3249
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ~
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Pred. No. 1.3e-20;
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                                                                                                                        two or more isolated
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or human polynuclectides or a polynuclectide which represents a fra derivative or allelic variation of the nucleic acid sequence. Also claimed are a vector comprising the novel polynuclectide, a host ce comprising the vector, a method for identifying a nuclectide sequen

fragment,

New composition comprising two or more isolated polypeptides, preparing a medicament for treating pain in an animal.

useful

for

Claim 1; Page; 1017pp; English

cell

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RESULT 4
ADE59630
ID ADE5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CC which is differentially regulated in an animal subjected to pain and a CC kit to perform the method, an array, a method for identifying an agent CC that is differentially expressed in neuronal tissue of a first animal CC that is differentially expressed in neuronal tissue of a first animal CC the expressed in an animal subjected to pain, a method for identifying a compound which regulates the expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the polynucleotides, a method for producing a pharmaceutical composition, a CC polynucleotides, a method for producing a pharmaceutical composition, a cctivity in an animal of one or more of the polypeptides given in the CC gain and a pharmaceutical composition composition composition and a pharmaceutical composition composition treating CC pain and a pharmaceutical composition composition that compound useful in treating CC pain and a pharmaceutical composition composition that contain (e.g. spinal segmental nerve injury (Chung), chronic constriction CC injury (CCI) and spared nerve injury (SNI) in an animal (e.g. gene CC the specification) which is differentially expressed during pain. Note: The sequence data for this patent did not form part of the printed CC specification, but was obtained in electronic form directly from WIPO at ftp. wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                               14-AUG-2001;
01-NOV-2001;
26-NOV-2001;
                                                                                                                                                                                                                                                                                                                                                                                                    Human; pain; neuronal tissue; gene therapy; spinal segmental nerve injury; chronic cons spared nerve injury; SNI; Chung.
                                                                                GENBANK; XP_008249.
                                                                                                     WPI; 2003-268312/26.
                                                                                                                                    Woolf C,
                                                                                                                                                                 (GEHO )
                                                                                                                                                                                                                                                                              14-AUG-2002; 2002WO-US025765.
                                                                                                                                                                                                                                                                                                             27-FEB-2003.
                                                                                                                                                                                                                                                                                                                                          WO2003016475-A2
                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human Protein XP_008249, SEQ ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-JAN-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADE59630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADE59630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1836 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1271
                                                                                                                                                                                                                                                                                                                                                                                                    segmental nerve injury; chronic constriction injury; CCI;
nerve injury; SNI; Chung.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28;
                                                                                                                                                                 GEN HOSPITAL BAYER AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MYLYFVIFIIFGSFFTLNLFIGVIIDNF 1298
                                                                                                                                    D'urso D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                             2001US-0312147P.
2001US-0346382P.
2001US-0333347P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein; 1836 AA
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                                                                                                                                                                                  CORP
                                                                                                                                    Befort
                                                                                                                                    ζ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 28; DB 7;
Pred. No. 1.3e-20
                                                                                                                                   Costigan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1836;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
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or human polynucleotides or derivative or allelic variat

invention discloses a composition comprising two or more isolated rate

des or a polynucleotide which represents a fravariation of the nucleic acid sequence. Also

fragment,

New composition comprising two or more isolated polypeptides, useful for preparing a medicament for treating pain in an animal.

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RESULT 5
ADB63 029
ID ADB6
XX ADB63 029
ADB6
XX ADB66
XX ADB6
XX ADB6
XX Huma
XX Huma
XX Huma
XX Hom
XX Spii
XX Spi
27
XX Hom
XX
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CC claimed are a vector comprising the novel polynucleotide, a host cell CC comprising the vector, a method for identifying a nucleotide sequence CC which is differentially regulated in an animal subjected to pain and a CC that increases or decreases the expression of the polynucleotide sequence CC that is differentially expressed in neuronal tissue of a first animal CC that is differentially expressed in neuronal tissue of a first animal CC expressed in an animal subjected to pain, a method for identifying a compound which regulates CC expressed in an animal subjected to pain, a method for identifying a compound which regulates the expression of the polynucleotide sequence which is differentially CC compound that regulates the activity of one or more of the polynucleotides, a method for producing a pharmaceutical composition, a cc withit in an animal of one or more of the polypeptides given in the capability of one or more of the polypeptides or their antibodies. The polynucleotide given in treating cc polypeptides or their antibodies. The polynucleotide or the compound that (e.g. spinal segmental nerve injury (Chung), chronic constriction contributy (CCI) and spared nerve injury (SN)) in an animal (e.g. gene the specification, but was obtained in electronic form directly from wipo at this patent did not form directly from wipo at first and pain, but was obtained in electronic form directly from wipo at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
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Best Local
                      WPI; 2003-268312/26.
GENBANK; XP_008249.
                                                                                                              Woolf C,
                                                                                                                                                                           (GEHO )
(FARB )
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01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; pain; neuronal tissue; gene therapy; spinal segmental nerve injury; chronic constriction injury; CCI; spared nerve injury; SNI; Chung.
                                                                                                                                                                                                                                                                                                                                                                            14-AUG-2002; 2002WO-US025765
                                                                                                                                                                                                                                                                                                                                                                                                                                               27-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human Protein XP_008249, SEQ ID NO 8963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO2003016475-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ftp.wipo.int/pub/published_pct_sequences.
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BAYER AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
28; Conserv
                                                                                                           D'urso D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                    CORP.
                                                                                                              Befort K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 28; DB 7;
Pred. No. 1.3e-20
                                                                                                     Costigan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
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CC subjected to pain, a method for identifying a compound which regulates the expression of a polymucleotide sequence which is differentially CC expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the CC compound that regulates the activity of one or more of the CC polynucleotides, a method for producing a pharmaceutical composition, a CC method for identifying a compound or small molecule that regulates the CC specification, a method for identifying a compound useful in treating CC polypeptides or their antibodies. The polypeptides given in the CC specification, a method for identifying a compound useful in treating CC polypeptides or their antibodies. The polynucleotide or the compound that modulates its activity is useful for preparing a medicament for treating CC injury (CCI) and spared nerve injury (Chung), chronic constriction CC injury (CCI) and spared nerve injury (Chung), chronic constriction CC the specification) which is differentially expressed during pain. Note: specification, but was obtained in electronic form directly from WIPO at CC from wino int/mih/mihlished not seminance.
Sequence 1836 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a kit to perform the method, an array, a method for identifying an agent that increases or decreases the expression of the polynucleotide sequence that is differentially expressed in neuronal tissue of a first animal
                                             ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention discloses a composition comprising two or more isolated rat or human polynucleotides or a polynucleotide which represents a fragment, derivative or allelic variation of the nucleic acid sequence. Also claimed are a vector comprising the novel polynucleotide, a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially remulated in an animal subjected to main and a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1; Page; 1017pp; English.
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                    S
                                      Matches
                                               Query Match
Best Local
                                             Local
1271 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 1298
           1 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 28
                                     28;
                                             Similarity
                                   Conservative
                                          100
                                           . 0%
                                  0;
                               Score 28; DB 7; Le
Pred. No. 1.3e-20;
" wiematches 0;
                                                Length 1836;
                               0
                             Gaps
                               0,
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RESULT 6
ADQ17412
ID ADQ1
XX ADQ1
AC ADQ1
XX Huma
XX Huma
XX Soft
XX Homo
XX H
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  soft tissue sarcoma; cytostatic; gene therapy; vaccine; screening; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human soft tissue sarcoma-upregulated protein - SEQ ID 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-AUG-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADQ17412;
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WO2004048938-A2

10-JUN-2004.

26-NOV-2003; 2003WO-US038193

26-NOV-2002; 2002US-0429739P.

(PROT-) PROTEIN DESIGN LABS INC

Ginsburg ¥

WPI; 2004-441208/41.

Early detection of soft tissue sarcoma comprises determining expression

Example sarcoma.

ㅂ

NO 229; 210pp; English.

of a gene in a first soft tissue sample and a normal soft tissue sample and comparing the gene expression, also useful in treating soft tissue

The invention relates to a novel method for detecting soft tissue sarcoma which comprises obtaining a first soft tissue sample from an individual and a normal soft tissue sample from the same or different individual, determining the expression of a gene in both samples and comparing the expression in the first soft tissue samples where a higher level of protein expression in the first soft tissue sample indicates the presence of soft tissue sarcoma. The method of the invention has cytostatic applications and may be useful for detecting soft tissue sarcoma, possibly via gene therapy or vaccine production. The nucleic acid sequences may be useful in diagnostic and screening applications. The current sequence is that of a human soft tissue sarcoma-upregulated protein of the invention. The current sequence is not shown within the specification per se but was submitted in CD format by the inventor.

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1271 MYLYFVIFIIFGSPFTLNLFIGVIIDNF 1298

1 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 28

Matches Query Match

28;

Conservative

0,

0

0,

Gaps

0

Local

Similarity

100.0%;

Score 28; DB 8; Pred. No. 1.3e-20; Mismatches

Length 1836; Indels

Sequence 1836 AA;

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RESULT 7
ADB78597
ID ADB7
XX ADB7
XX ADB7
XX ADB7
XX ADB7
XX ADB7
XX Mutc
XX Mutc
XX Mutc
XX Mutc
XX Ion
XX Ion
XX Synt
OS Synt
OS Synt
OS Homc
XX V
EN WO2(
XX W Ion
XX WIO
PA (WAI
PR 13-1
PR 13-
                                   Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
                                                                                                                                                                                                                                                                                                                                                       Berkovic
                                                                                                                                                                                                                                                                                                                                                                                           Mulley JC,
                                                                                                                                                                                                                                                                  2003-239332/23.
                                                                                                                                                                                                                          ADB78636.
                                                                                                                                                                                                                                                                                                                                                   SF,
                                                                                                                                                                                                                                                                                                                                                   Harkin LA,
Scheffer
                                                                                                                                                                                                                                                                                                                                                           IE;
                                                                                                                                                                                                                                                                                                                                                                                               Dibbens LM, Phillips HA,
                                                                                                                                                                                                                                                                                                                                                                                               Heron SE;
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Mulley JC,

Harkin LA,

Dibbens LM,

Heron

18-JUL-2001; 2001AU-00006452. 05-MAR-2002; 2002AU-00000910. 13-MAY-2002; 2002AU-00002292.

BIONOMICS WALLACE R

W. UTD

08-JUL-2002; 30-JAN-2003. WO2003008574-A1

2002WO-AU000910.

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RESULT 8
ADB78607
ID ADB78607
XX ADB7
XX ADB7
XX ADB7
XX Huma
XX mute
KW meute
KW neph
KW ion
XX Synt
OS Synt
OS Synt
OS Synt
OS Synt
OS Synt
OS Homo
XX Ion
OS Homo
XX Ion
OS Homo
XX Ion
OS Mono
XX Ion
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cc predisposed to a disorder associated with ion channel dysfunction. The cc method comprises ascertaining if at least one of the genes encoding ion channel subunits (ICS) has undergone a mutation event so that a cDNA cc derived from the subject has any of 134 nuclective sequences. The method cof the invention has nootropic, neuroprotective, inotropic, antipyretic, cantiarrhythmic, antimigraine, antidepressant, antiparkinsonian, cc antiarrhythmic, antipyretic, methodoxide, antipyretic, conditional activity. A polynucleotide of the invention acts as an condition channel agonist, or ion channel antagonist. The methods, isolated conditional, are useful for the diagnosis and treatment of epilepsy and/or a clist of an ion channel, cells and genetically modified non-human cc animal, are useful for the diagnosis and treatment of epilepsy and/or a clistance associated with ion channel dysfunction, such as hyper or hypocomy and the converted associated with ion channel dysfunction, such as hyper or hypocomy and the converted associated with ion channel dysfunction, such as hyper or hypocomy and the converted associated with ion channel dysfunction, such as hyper or hypocomy and the converted associated with ion channel dysfunction, such as hyper or hypocomy and the converted associated with ion channel dysfunction, such as hyper or hypocomy of disease, parkinson's disease, schizophrenia, hyperthermia, anxiety, consistent and converted associated with ion channel dysfunction, such as hyper of disease, convention. The sequence symptoms, neuropathic pain, inflammatory consist, anxiety, such as sequence associated in the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pat_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                           18-JUL-2001;
05-MAR-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mutein; mutant; ion channel; ion channel subunit; ICS; nootropic; neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADB78607 standard; protein; 1950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1855 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 13; SEQ ID NO 141; 106pp; English
                                                                                                                                                                                                                                                                                                                08-JUL-2002; 2002WO-AU000910
                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO2003008574-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human sodium channel subunit mutant SEQ ID NO:151
                                                                       (WALL/)
                                                                                                           (BION-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                channel dysfunction; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28;
                                                                       WALLACE R
                                                                                                           BIONOMICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MYLYFVIFIIFGSFFTLNLFIGVIIDNF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MYLYFVIFIIFGSFFTLNLFIGVIIDNF 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                        2001AU-00006452.
2002AU-00000910.
2002AU-00002292.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              relates to a novel method for identifying a subject
                                                                   ¥. LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 28; I
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
   Phillips HA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 7; 1
1.3e-20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1855;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>.</u>
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0

muteln; mutant; ion channel; ion channel subunit; ICS; nootropic; neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy;

channel dysfunction; human.

sapiens.

04-DEC-2003

(first entry)

ADB78597 standard; protein; 1855 AA

Human sodium

channel subunit mutant SEQ

ID NO:141

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TO ACK XXX ACK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                predisposed to a disorder associated with ion channel dysfunction. The CC channel subunits (ICS) has undergone a mutation event so that a cDNA CC of the invention has nootropic, neuroprotective, intropic, antipyretic, cc neuroleptic, tranquiliser, analgesic, nephrotropic, antiparkinsonian, cc ophthalmological activity. A polymucleotide of the invention acts as an uncleic acids, polypeptides, antibgoressant, antiparkinsonian, complete acids, polypeptides, antipycetive applicative and cc noucleic acids, polypeptides, antibgonist. The methods, isolated completed acids, polypeptides, antipoly, selective agonist, antagonist or animal, are useful for the diagnosis and treatment of epilepsy and/or a disorder associated with ion channel dysfunction, such as hyper or hypotogramal, are useful for the diagnosis and treatment of epilepsy and/or a disorder associated with ion channel dysfunction, such as hyper or hypotogramal, are useful for the diagnosis and treatment of epilepsy and/or a disorder associated with ion channel dysfunction, such as hyper or hypotograms, chronic/acute pain, bartier's episodic ataxia, migraine, Alzheimer's cd depression, phobic obsessive symptoms, meuropathic pain, inflammatory completed specification, but was obtained in electronic kidney disease, fine present sequence represents and total colour convention. The present sequence represents an utant protein of the convention, but was obtained in electronic format directly axis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                       26-NOV-1999;
                                                                   24-NOV-2000; 2000WO-CA001404
                                                                                                                                                31-MAY-2001
                                                                                                                                                                                                             WO200138564-A2
                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                           Human; epilepsy; chromosome 2; SCNIA; SCN2A; SCN3A; identification; diagnosis; mutation; chromosome 2q23-q31; neurological disorder; anticonvulsant; neuroprotective.
                                                                                                                                                                                                                                                                                                                                                                                                                                     Human adult form of SCN3A protein sequence SEQ ID NO:67.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAB99678 standard; protein; 1951 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1950 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local S. 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 13; SEQ ID NO 151; 106pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Identifying predisposition to an ion channel dysfunction, such as periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's disease, schizophrenia, anxiety and depression, by detecting encoding-gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1394 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 1421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                99US-0167623P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           relates to a novel method for identifying a subject o a disorder associated with ion channel dysfunction. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scheffer IE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 28; DB 7; 100.0%; Pred. No. 1.4e-20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1950;
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RESULT 10
AAB99679
XX AAB99
XX AAB99
XX AAB99
XX Human
XX Human
XX Human
XX Homo
XX Ho
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention describes a method (M1) of determining an individual's predisposition to epilepsy and/or development of epilepsy, as well as predicting the individual's response to medication. The method CC comprises determining the genotype of at least one gene selected from CC SCNIA, SCNZA or SCNJA, or a DNA variant, equivalent, or mutation which CC channel genes located on chromosome 2. The idiopathic generalised occidentally localised on chromosome 273. Compounds identified as modulators of the biological activity of SCNJA, SCNZA or SCNJA proteins or genes, are useful for treating epilepsy (CC or other neurological disorders. They have anticonvulsant and CC represent SCNJA, SCNZA, and SCNJA, and SCNJA conditions of the biological activity of CC or other neurological disorders. They have anticonvulsant and CC represent SCNJA, SCNZA, and SCNJA, cDNAS, gene fragments, PCR primers, CC oligonucleotides and proteins given in the exemplification of the present convention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                            WPI; 2001-355945/37.
N-PSDB; AAH55824.
                                                                                                                                                           Rouleau GA,
                                                                                                                                                                                                                                                                       26-NOV-1999;
                                                                                                                                                                                                                                                                                                                      24-NOV-2000; 2000WO-CA001404
                                                                                                                                                                                                                (UXMC-) UNIV MCGILL
                                                                                                                                                                                                                                                                                                                                                                                    31-MAY-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200138564-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            anticonvulsant; neuroprotective.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; epilepsy; chromosome 2; SCN1A; SCN2A; SCN3A; identification; diagnosis; mutation; chromosome 2q23-q31; neurological disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human neonatal form of SCN3A protein sequence SEQ ID NO:68.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       04-SEP-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB99679 standard; protein; 1951 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1951
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Determining a predisposition to epilepsy and/or development of epilepsy comprises determining the genotype of SCNIA, SCN2A and/or SCN3A, or a DNA variant, equivalent, or mutation which shows a linkage disequilibrium.
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Pred. No. 1.4e-20;
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                                                                                                                                            Ragsdale
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Determining a predisposition to epilepsy and/or development of epilepsy comprises determining the genotype of SCNIA, SCN2A and/or SCN3A, or a DNA

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The invention discloses a composition comprising two or more isolated rat or human polynucleotides or a polynucleotide which represents a fragment, derivative or allelic variation of the nucleic acid sequence. Also claimed are a vector comprising the novel polynucleotide, a host cell
                                                                                 Claim 1;
                                                                                                           New composition comprising preparing a medicament for
                                                                                                                                                             GENBANK;
                                                                                                                                                                                                          Woolf C,
                                                                                                                                                                                                                                           (GEHO )
(FARB )
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01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rat; pain; neuronal tissue; gene therapy; spinal segmental nerve injury; chronic constriction injury; CCI; spared nerve injury; SNI; Chung.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rat Protein NP_037251,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29-JAN-2004
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                                                                                                                                                                                                          D'urso D,
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                                                                                 1017pp;
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                                                                                                                                                                                                              Befort
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQ
                                                                                 English
                                                                                                           two or more isolated polypeptides, useful treating pain in an animal.
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Pred. No. 1.4e-20;
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Best Local S
Matches 28
                                                                                                                                                                                             19-AUG-2002; 2002US-0404809P.
21-AUG-2002; 2002US-0413192P.
23-SEP-2002; 2002US-0413192P.
15-OCT-2002; 2002US-041908P.
15-NOV-2002; 2002US-0426847P.
02-JUL-2003; 2003US-0484959P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human tumour-associated antigenic target (TAT) polypeptide
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                                                                                                        Desauvage F
Spencer SD,
                                                                                                                                                                                                                                                                                                                              19-AUG-2003; 2003WO-US025892.
                                                                                                                                                                                                                                                                                                                                                                                                     WO2004016225-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; tumour-associated antigenic target; TAT; cell death; tumour;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADL06576;
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                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                             (GETH ) GENENTECH INC.
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                                                                    2004-257144/24.
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Similarity 100.0%;
28; Conservative (
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Tu TD, Z
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Pred. No. 1.4e-20;
; Mismatches 0;
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                                                                                                                           Smith V;
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New antibody that binds polypeptide, useful for

to a tumor-associated antigenic target preparing a composition for diagnosing

N-PSDB; ADL06499.

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RESULT 13
AAE20511
ID AAE20
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Best Local S
Matches 28
The present sequence is novel human protein (NHP), ion channel protein. NHP share structural similarity with mammallian sodium channel proteins particularly voltage-gated sodium channel proteins. NHP oligonucleotides are useful as hybridisation probes for screening libraries and assessing gene expression patterns. Sequences derived from regions adjacent to the
                                                                                                                                                                                                                                                                                                                                                                 WPI; 200
N-PSDB;
                                                                                                                                                                               Claim 1; Page 37-41; 83pp; English.
                                                                                                                                                                                                                                  Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-AUG-2001; 2001WO-US025650
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     Turner CA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-AUG-2000; 2000US-0225989P
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LEXICON GENETICS INC.
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Pred. No. 1.4e-20;
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Best Local Sim
Matches 28;
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CC sites, introns that can be used in diagnostics and pharmacogenomics. NHP
CC nucleotide sequences are useful for drug screening effective in the
CC treatment of symptomatic or phenotypic manifestations of perturbing the
CC normal function of NHP in the body, and nucleotide constructs encoding
CC MHP products are useful to genetically engineer host cells to express NHP
CC products in vivo. These genetically engineered cells function as
CC bioreactors in the body delivering a continuous supply of a NHP, a NHP
CC peptide, or a NHP fusion protein to the body. Nucleotide construct
CC encoding NHP products are also useful in gene therapy for modulating NHP
CC expression and to produce genetically engineered host cells to express
CC MHP products in vivo. NHP nucleotide sequences may also be used as part
CC of ribozyme and/or triple helix sequences that are useful for NHP gene
CC regulation. The NHP polypeptides are useful for generating antibodies, as
CC reagents in diagnostic assays, for identifying other cellular gene
CC compounds that are useful in the treatment of mental, biological or

CC compounds that are useful in the treatment of mental, biological or
                        Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      medical disorder.
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                                                                                                                                                          Turner CA,
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                                                                                                                                                                                             (LEXI-) LEXICON GENETICS INC
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                                                                                                    2002-280757/32.
DB; AAD32845.
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ilarity 100.0%;
Conservative (
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Pred. No. 1.4e-20;
Mismatches 0;
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Claim 1; Page 64-68; 83pp; English

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CC in amplification assays to detect mutations within the exons, splice CC sites, introns that can be used in diagnostics and pharmacogenomics. NHP cc nucleotide sequences are useful for drug screening effective in the CC treatment of symptomatic or phenotypic manifestations of perturbing the CC normal function of NHP in the body, and nucleotide constructs encoding CC NHP products are useful to genetically engineer host cells to express NHP CC products in vivo. These genetically engineered cells function as CC bioreactors in the body delivering a continuous supply of a NHP, a NHP CC peptide, or a NHP fusion protein to the body. Nucleotide construct CC encoding NHP products are also useful in gene therapy for modulating NHP CC expression and to produce genetically engineered host cells to express CC NHP products in vivo. NHP nucleotide sequences may also be used as part CC of ribozyme and/or triple helix sequences that are useful for NHP gene CC reagents in diagnostic assays, for identifying other cellular gene CC compounds that are useful in the treatment of mental, biological or
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SCNIA; sodium channel type 1 alpha-subunit; anticonvulsant; analgesic; neuroprotective; anesthetic; cytostatic; cerebroprotective; cardiant;
                                                                                                                                                                                                               George
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human SCN1A splice variant -84P:SCN1ADELp654-681.
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Recombinantly expressed sodium channel type 1 alpha subunit, screening for modulators, for treating e.g. epilepsy.
                                                                                                                                            WPI; 2003-712725/67.
                                                                                                                                                                                                                                                                                 (UYVA-)
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Mismatches 0;
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Disclosure; Page 162-169; 176pp; English

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RESULT 16
AAE20510
ID AAE20510
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XX Human
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Matches
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particularly voltage-gated sodium channel proteins. NHP oligonucleotides are useful as hybridisation probes for screening libraries and assessing gene expression patterns. Sequences derived from regions adiacomminations
                                                                                                                                                                                                                                                                   Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for druscreening, diagnosis and in gene therapy of biological disorders
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                                                                                                               The present sequence is novel human protein (NHP), ion NHP share structural similarity with mammalian sodium
                                                                                                                                                                                                        Claim 1; Page 30-34; 83pp; English.
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N-PSDB; AAD32839.
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gene therapy; bioreactor; mental disorder; biological disorder;
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28; Conser
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RESULT 17
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Matches 28
potentially useful as anticonvulsant, antiepileptic, neuroprotective, analyssic and/or anesthetic agents, e.g. for treating severe myoclonic epilepsy of infancy, stroke, cardiac arrest, hyperkalemic paralysis,
                                                                                           The invention relates to a recombinantly expressed and isolated | SCNIA (sodium channel type 1 alpha-subunit) (I). (I), optionally incorporated into a cell, is used to screen for specific modulatons.
                                                                                                                                                                                                                            Disclosure; Page 148-156; 176pp; English.
                                                                                                                                                                                                                                                                          Recombinantly expressed sodium channel type 1 alpha subunit, useful in screening for modulators, for treating e.g. epilepsy.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human SCN1A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ABR83184 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2003-712725/67.
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                                                                                                                                                                                                                                                                                                                                                                                                   ACF57879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1998
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Conservative 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein; 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -33P:SCN1ADELp671-681.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 28; DB 5; Pred. No. 1.4e-20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
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                                                                                               modulators,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       analgesic; cardiant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
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MYLYFVIFIIFGSFETLNLFIGVIIDNF

Matches

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Similarity

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RESULT 18
ABB06026
ID ABB06
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               Query Match
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Best Local S
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                                                                           The present invention describes human sodium channels SCNIA and SCNIA. The present sequence represents the human sodium channel SCNIA. SCNIA and SCNIA have been located to the human chromosome 2 long arm, positions 2q24 and 2q24-31 respectively. The sodium channel proteins are useful in studying the physiological mechanism in which excitant cells participate and cause human diseases, and in developing remedies for e.g. familial hypercalcaemic periodic paralysis of extremities and motor endplate
                                            Sequence 1999
                                                                                                                                                                                                 Claim 1; Page 40-49; 88pp; Japanese.
                                                                                                                                                                                                                        Human sodium channels SCN1A and SCN3A and encoded genes, useful in studying physiological mechanism in which excitant cells participate causes of diseases and developing drugs for motor endplate disease.
                                                                                                                                                                                                                                                                                            N-PSDB; ABL39689.
                                                                                                                                                                                                                                                                                                                                      Kanazawa I,
                                                                                                                                                                                                                                                                                                                                                                                              13-JUN-2000; 2000JP-00177540.
13-JUN-2000; 2000JP-00177544.
                                                                                                                                                                                                                                                                                                                                                               (NISC-) JAPAN SCI & TECHNOLOGY CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                        12-JUN-2001; 2001WO-JP004956.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; sodium channel; SCN1A; chromosome 2q24; familial hypercalcaemic periodic paralysis; motor endplate disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human sodium channel SCN1A protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200196552-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABB06026 standard; protein; 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  motor endplate diseases, hypertension, congestive heart failure and muscular dystrophy also to treat cancer (SCNIA is expressed in prostatic and metastatic cancer cell lines). These activities can also be provided by gene therapy vectors that express (I) or the modulators. The modulators, also antibodies directed against (I), are used to detect sodium channel polypeptides. The present sequence represents a human SCNIA splice variant 33P.SCNIADELp671-681 encoding cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1998 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1448
                                                                                                                                                                                                                                                                                                          2002-098066/13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MYLYFVIFIIFGSFFTLNLFIGVIIDNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MYLYFVIFIIFGSFFTLNLFIGVIIDNF 1475
                                                                                                                                                                                                                                                                                                                                     Goto J,
                                            A
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100.0%;
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Score 28; Pred. No.
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Pred. No. 1.4e-20;
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            DB
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          Length 1999;
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RESULT 20
ADK81762
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                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                     The present invention describes human sodium channels SCNIA and SCNIA, and The present sequence represents the human sodium channel SCNIA. SCNIA and SCNIA have been located to the human chromosome 2 long arm, positions 2024 and 2024-31 respectively. The sodium channel proteins are useful in studying the physiological mechanism in which excitant cells participate and cause human diseases, and in developing remedies for e.g. familial
Nav1.3; Analgesic; Nootropic; Neuroprotective; post-herpetic neuralgia; diabetic neuropathy; arthritic pain; migraine headache; infantile epilepsy; ataxia.
                                                                                                                                                                                                                                                            Sequence 2000 AA;
                                                                                                                                                                                                                                                                                                                                                                                                         Human sodium channels SCN1A and SCN3A and encoded genes, useful in studying physiological mechanism in which excitant cells participate causes of diseases and developing drugs for motor endplate disease.
                                            Human Nav1.3
                                                                    20-MAY-2004
                                                                                        ADK81762;
                                                                                                             ADK81762 standard; protein;
                                                                                                                                                                                                                                                                                             hypercalcaemic periodic paralysis of extremities and motor endplate
                                                                                                                                                                                                                                                                                                                                                                                     Claim 2; Page 72-81; 88pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kanazawa I,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-JUN-2000;
13-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12-JUN-2001; 2001WO-JP004956.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20-DEC-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200196552-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; sodium channel; SCN3A; chromosome 2q24-31; familial hypercalcaemic periodic paralysis; motor endplate disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human sodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10-MAY-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ABB06027 standard; protein; 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (NISC-) JAPAN SCI & TECHNOLOGY
                                                                                                                                                                     1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2002-098066/13.
                                                                                                                                                                                  1 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 28
                                                                                                                                                                                                                 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABL39690
                                                                                                                                                                                                                            Similarity
                                                                                                                                                                     MYLYFVIFIIFGSFFTLNLFIGVIIDNF 1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MYLYFVIFIIFGSFFTLNLFIGVIIDNF 1476
                                                                                                                                                                                                                100.0%; ilarity 100.0%; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000JP-00177540.
2000JP-00177544.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Goto J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                channel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                            protein.
                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SCN3A protein SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Jeong
                                                                                                              2000
                                                                                                                                                                                                                 0
                                                                                                                                                                                                                            Score 28; DB 5;
Pred. No. 1.4e-20;
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                                                                                                                                                                                                                 Mismatches
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                                                                                                                                                                                                                                     Length 2000;
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RESULT 21
AAB99676
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Best Local S
Matches 28
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                                                               24-NOV-2000;
                                                                                                  31-MAY-2001.
                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                 anticonvulsant; neuroprotective
                                                                                                                                                                                                               Human; epilepsy; chromosome 2; SCN1A; SCN2A; SCN3A; identification; diagnosis; mutation; chromosome 2q23-q31; neurological disorder;
                                                                                                                                                                                                                                                                  Human adult form of SCN2A protein sequence SEQ ID NO:35
                                                                                                                                                                                                                                                                                                     04-SEP-2001
                                                                                                                                                                                                                                                                                                                                      AAB99676;
                                                                                                                                                                                                                                                                                                                                                                    AAB99676 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2000 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; SEQ ID NO 9096; 417pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New antisense compound targeted to a nucleic acid molecule encoding Navl.3, useful for useful for treating a disease or condition assocwith Navl.3, e.g. pain, seizure disorder such as childhood seizure
                               26-NOV-1999;
                                                                                                                                  WO200138564-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 disorder, or ataxia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2004-203785/19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Roberds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14-AUG-2002; 2002US-0403416P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14-AUG-2003; 2003WO-US025465
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(UYMC-) UNIV MCGILL.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         1444 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MYLYFVIFIIFGSFFTLNLFIGVIIDNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADK81761.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              represents human Nav1.3 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                 2000WO-CA001404.
                                                                                                                                                                                                                                                                                                     (first
                               99US-0167623P
                                                                                                                                                                                                                                                                                                   entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                      2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 28; DB 8;
Pred. No. 1.4e-20;
Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
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RESULT 22
AAB99677
ID AAB99
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Determining a predisposition to epilepsy and/or development of epilepsy comprises determining the genotype of SCNIA, SCN2A and/or SCN3A, or a Divariant, equivalent, or mutation which shows a linkage disequilibrium.
                                                                                                       N-PSDB;
                                                                                                                           WPI; 2001-355945/37.
                                                                                                                                                                                                                                                                     26-NOV-1999;
                                                                                                                                                                                                                                                                                                           24-NOV-2000; 2000WO-CA001404.
                                                                                                                                                                                                                                                                                                                                                                31-MAY-2001.
                                                                                                                                                                                                                                                                                                                                                                                                         WO200138564-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 anticonvulsant; neuroprotective.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; epilepsy; chromosome 2; SCNIA; SCN2A; SCN3A; identification; diagnosis; mutation; chromosome 2q23-q31; neurological disorder;
                                                                                                                                                                                                                           (UXMC-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human neonatal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB99677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAB99677 standard; protein; 2005 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Page 123-130; 268pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Determining a predisposition to epilepsy and/or development of epilepsy comprises determining the genotype of SCN1A, SCN2A and/or SCN3A, or a DNA variant, equivalent, or mutation which shows a linkage disequilibrium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       sapiens.
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                                                                                                                                                                           GA,
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of epilepsy,
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                                                                        This invention relates to a human polynucleotide which is complementary to an mRNA transcribed from a "generalized epilepsy with febrile seizury plus" (GEFS+)-related gene. The gene is useful for diagnosing GEFS+. The present sequence represents the human GEFS+ protein sequence with SCN2A
                                                                                                                                                                                                                                          Claim 10;
                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; ABQ79201.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-2000; 2000JP-00334969.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; GEFS+; SCN2A; mutant; mutein; generalized epilepsy with febrile se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention describes a method (MI) of determining an individual's predisposition to epilepsy and/or development of epilepsy, as well as predicting the individual's response to medication. The method comprises determining the genotype of at least one gene selected from SCNIA, SCN2A or SCN3A, or a DNA variant, equivalent, or mutation which shows a linkage disequilibrium. SCNIA, SCN2A and SCN3A are all sodium epilepsy (IGE) gene is more specifically localised on chromosome 2023-031. Compounds identified as modulators of the biological activity of SCN1A, SCN2A or SCN3A proteins or genes, are useful for treating epilepsy or other neurological disorders. They have anticonvulsant and neuroprotective activities. AAH55763 to AAH56164 and AAB99674 to AAB99679 represent SCN1A, SCN2A, and SCN3A CNNAs, gene fragments, DCR primers, anxention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human GEFS+ protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (KAGA-) KAGAKU GIJUTSU SHINKO JIGYODAN.
(RIKA ) RIKAGAKU KENKYUSHO.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2005 AA;
                                                                                                                                                                                                                                                                                      human polynucleotide which is complementary to an mRNA transcribed from generalized epilepsy with febrile seizure plus (GEFS+)-related gene seful for diagnosing GEFS+.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
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                                                                                                                                                                                                                                 Page 29-34; 37pp; Japanese.
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predisposed to a disorder associated with ion channel dysfunction. The comprises ascertaining if at least one of the genes encoding ion channel subunits (ICS) has undergone a mutation event so that a cDNA cerived from the subject has any of 134 nucleotide sequences. The method of the invention has nootropic, neuroprotective, inotropic, antipyretic, contiarrhythmic, antimigraine, antidepressant, antiparkinsonian, convergebic, tranquiliser, analgesic, nephrotropic, antidabetic, and ophthalmological activity. A polynucleotide of the invention acts as an conclusion channel agonist, or ion channel antagonist. The methods, isolated cucleic acids, polypeptides, antibody, selective agonist, antagonist or conclusion channel, cells and genetically modified non-human and conclusion of an ion channel, cells and genetically modified non-human conclusion. Are useful for the diagnosis and treatment of epilepsy and/or a conclusion periodic paralysis, myotonias, malignant hyperthermia, conclusion, such as hyper- or hypockalemic periodic paralysis, myotonias, malignant hyperthermia, antiety, conclusion, phobic obsessive symptoms, neuropathic pain, inflammatory disease, Parkinson's disease, schizophrenia, hyperthick, anxiety, conclusion, chronic/acute pain, Bartter's syndrome, polycystic kidney disease,
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Best Local S
Matches 28
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Berkovic SI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-JUL-2001; 2001AU-00006452.
05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 13; SEQ ID NO 148; 106pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mutation events.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mutein; mutant; ion channel; ion channel subunit;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human sodium channel subunit mutant SEQ ID NO:148
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WALLACE R
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      osition to an ion channel dysfunction, such as cardiac arrhythmias, migraine, Alzheimer's disease,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entry)
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Pred. No. 1.4e-20;
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The invention relates to a novel method for identifying a subject predisposed to a disorder associated with ion channel dysfunction. The method comprises ascertaining if at least one of the genes encoding ion channel subunits (ICS) has undergone a mutation event so that a CDNA derived from the subject has any of 134 nucleotide sequences. The metho of the invention has mostropic, neuroprotective, inotropic, antipyretic antiarrhythmic, antimigraine, antidepressant, antiparkinsonian, neuroleptic, tranquiliser, analgesic, nephrotropic, antidiabetic, and ophthalmological activity. A polynucleotide of the invention acts as an ion channel agonist, or ion channel antagonist. The methods. isolated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-JUL-2001;
05-MAR-2002;
13-MAY-2002;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mutein; mutant; ion channel; ion channel subunit; ICS; nootropic; neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine; antidepressant; antiparkinsonian; neuroleptic; tranquiliser; analgesic; nephrotropic; antidiabetic; ophthalmological; epilepsy;
                                                                                                                                                                                                                                                                                                                                Claim 13; SEQ
                                                                                                                                                                                                                                                                                                                                                                                                               Identifying predisposition to an ion channel dysfunction, such periodic paralysis, cardiac arrhythmias, migraine, Alzheimer's schizophrenia, anxiety and depression, by detecting encoding-ge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-JUL-2002; 2002WO-AU000910
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cc nucleic acids, polypeptides, antibody, selective agonist, antagonist or cc modulator of an ion channel, cells and genetically modified non-human cc animal, are useful for the diagnosts and treatment of epilepsy and/or a disorder associated with ion channel dysfunction, such as hyper- or hypock alemic periodic paralysis, myotonias, malignant hyperthermia, cardiac arrhythmias, episodic ataxia, migraine, Alzheimer's cdisease, Parkinson's disease, schizophrenia, hyperkplexia, anxiety, cc disease, parkinson's disease, schizophrenia, hyperkplexia, anxiety, cc depression, phobic obsessive symptoms, neuropathic pain, inflammatory companic/acute pain, Bartter's syndrome, polycystic kidney disease, bent's disease, hyperinsulinaemic hypoglycaemia of infancy, cystic compension, the present sequence represents a mutant protein of the lintness The present sequence represents a mutant protein of the printed specification, but was obtained in electronic format directly crom wipo at ftp.wipo.int/pub/published_pat_sequences. Sequence 2005 AA; y Match 100.0%; S Local Similarity 100.0%; P hes 28; Conservative 0; Score 28; DB 7; I Pred. No. 1.4e-20; 0; Mismatches 0; Length 2005; Indels 0; Gaps 0

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probable capsule phypothetical prote H+/Ca2+ exchanger hypothetical prote coumarin 7-bydroxy hypothetical prote sodium channel prote coumarin 7-bydroxy hypothetical prote chypothetical prote hypothetical prote signal peptidase transporting twhypothetical prote hypothetical prote hypothetical prote signal peptidase transportentical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote enterochelin uptak oligopeptide trans flagellar biosynth probable membrane hypothetical prote hypotheti

ALIGNMENTS

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Sodium channel alpha chain - human C;Species: Homo sapiens (man)
C;Becies: Homo sapiens (man)
C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 09-Jul-2004
C;Accession: JS0648; A42099
R;Wang, J:; Rojas, C.V.; Zhou, J.; Schwartz, L.S.; Nicholas, H.; Hoffmann, [Biochem. Biophys. Res. Commun. 182, 794-801, 1992
A;Title: Sequence and genomic structure of the human adult skeletal muscle
                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-refer
C;Genetics:
A;Gene: SkM1
C;Superfamily
C;Keywords: d
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                                                                                                                                                                               JS0648
                                                                                                                                                                                                 RESULT
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A;Molecule type: mRNA
A;Residues: 1-1836 <RES>
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A;Title: Primary structure of the adult human skeletal muscle A;Reference number: IS1964; MUID:92246457; PMID:1315496
A;Recession: I64893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Species: Homo sapiens
C;Date: 06-Sep-1996 #sec
C;Accession: 164893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ann. Neurol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sodium channel alpha subunit - C; Species: Homo sapiens (man)
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A;Map position: 17q23.1-17q25.3
A;Introns: 91/3; 131/2; 161/2; 204/2; 235/1; 346/1;
C;Superfamily: sodium channel protein
C;Keywords: duplication
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C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 20-Aug-1999
C;Accession: I54323
R;McClatchey, A.I.; Lin, C.S.; Wang, J.; Hoffman, E.P.; Rojas, C.; Gusella, J.F.
Hum. Mol. Genet. 1, 521-527, 1992
A;Reference number: I54323; MUID:93338444; PMID:1339144
A;Accession: I54323
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A; Residues: 1-1835 < RES>
A; Cross-references: GB:L01983; NID:g337992; PIDN:AAA75557.1; PID:g908809
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Best Local
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Similarity 100.0%;
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Pred. No. 3.4e-20;
); Mismatches 0;
      human adult skeletal muscle sodium
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F:667-686/Domain: transmembrane #status predicted <RIS-
F:702-724/Domain: transmembrane #status predicted <RIS-
F:702-724/Domain: transmembrane #status predicted <RIS-
F:1027-1049/Domain: transmembrane #status predicted <III>F:1006-1116/Domain: transmembrane #status predicted <III>F:1037-1049/Domain: transmembrane #status predicted <III>F:1036-1116/Domain: transmembrane #status predicted <III>F:1132-1143/Domain: transmembrane #status predicted <III>F:1139-1295/Domain: transmembrane #status predicted <III>F:1259-1295/Domain: transmembrane #status predicted <VS1>F:1349-1377/Domain: transmembrane #status predicted <VS2>F:1447-1469/Domain: transmembrane #status predicted <VS2>F:1447-1469/Domain: transmembrane #status predicted <VS3>F:1447-1469/Domain: transmembrane #status predicted <VS3>F:1447-1469/Domain: transmembrane #status predicted <VS4>F:1574-1598/Domain: transmembrane #status predicted <VS5>F:1447-1469/Domain: transmembrane #status predicted <VS5>F:1447-1469/Domain: transmembrane #status predicted <VS5>F:1447-1469/Domain: transmembrane #status predicted <VS6-F:21,149,220,378,415,1019,1130,1242,1313,1721,1826/Binding site: phosphate (Thr) (covaler F:56,251,513,653,151,1746/Binding site: phosphate (Ser) (covalent) (by protein kinase A) F:246,670,725,850,950,1127,1195,1328/Binding site: phosphate (Ser) (covalent) (by protein kinase A) F:346,670,725,850,950,1127,1195,1328/Binding site: phosphate (Ser) (covalent) (by protein kinase A) F:346,670,725,850,950,1127,1195,1328/Binding site: phosphate (Ser) (covalent) (by protein kinase A) F:346,670,725,850,950,1127,1195,1328/Binding site: phosphate (Ser) (covalent) (by protein kinase A) F:346,670,725,850,950,1127,1195,1328/Binding site: phosphate (Ser) (covalent) (by protein kinase A) F:346,670,725,850,950,1127,1195,1328/Binding site: phosphate (Ser) (covalent) (by protein kinase A)
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F;191-210/Domain: transmembrane #status predicted <TR2>
F;217-236/Domain: transmembrane #status predicted <TR2>
F;217-236/Domain: transmembrane #status predicted <TR3>
F;253-266/Domain: transmembrane #status predicted <TR4>
F;424-449/Domain: transmembrane #status predicted <TR6>
F;574-597/Domain: transmembrane #status predicted <TR6>
F;574-597/Domain: transmembrane #status predicted <TR6>
F;609-632/Domain: transmembrane #status predicted <TR1>
F;609-632/Domain: transmembrane #status predicted <TR1>
F;641-660/Domain: transmembrane #status predicted <TR1>
F;641-680/Domain: transmembrane #status predicted <TR1>
F;702-724/Domain: transmembrane #status predicted <TR1>
F;702-724/Domain: transmembrane #status predicted <TR1>
F;707-802/Domain: transmembrane #status predicted <TR1>
F;707-802/Domain: transmembrane #status predicted <TR1>
R;George, A.L.
Ann. Neurol. 31, 131-137, 1992
A;Title: Primary structure of (
A;Reference number: 151964, MU
A;Accession: 151964
                                                                                                                                                                            sodium channel alpha chain SCN4A, skeletal muscle - human c;Species: Homo sapiens (man) C;Date: 24-May-1996 #sequence_revision 24-May-1996 #text_change 09-Jul-2004 C;Accession: I51964
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Best Local (
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A;Map position: 17q23.1-17q25.3
C;Superfamily: sodium channel protein
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A;Cross-references: UNIPROT:p35499
A;Note: 861-Asp was also found as the result of polymorphism
R;McClatchey, A.I.; Van den Bergh, P.; Pericak-Vance, M.A.; Raskind, W.; Verellen,
Cell 68, 769-774, 1992
A;Title: Temperature-sensitive mutations in the III-IV cytoplasmic loop region of the A;Reference number: A42099; MUID:92154689; PMID:1310898
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A/Experimental source: skeletal muscle
A/Note: sequence extracted from NCBI backbone (NCBIN:82622, NCBIP:82623)
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A; Residues: 1299-1351 < MCC>
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A; Residues: 1-1836 < W
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A;Status: nucleic acid sequence not
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A;Accession: JS0648
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                     ructure of the adult human skeletal muscle voltage-dependent I51964, MUID:92246457; PMID:1315496
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A;Accession: JN0007
A;Accession: JN0007
A;Molecule type: mnNA
A;Residues: 1-1840 <TRI>
A;Cross-references: UNIPROT:P15390; GB:M26643; NID:g205651; PIDN:AAA41682.1; PID:g205652
A;Cross-references: UNIPROT:P15390; GB:M26643; NID:g205651; PIDN:AAA41682.1; PID:g205652
C;Comment: Action potentials propagated by skeletal muscle sodium channels are responsite C;Comment: This heavily glycosylated protein contains four homologous domains, each of w C;Comment: This protein is distinct from but related to sodium channel proteins isolated C;Superfamily: sodium channel protein; ion transport; neuromuscular junction; phosphoprot;Keywords: duplication; glycoprotein; ion transport; neuromuscular junction; phosphoprot;120-458,561-813,1013-1305,1335-1611/Region: duplication
F;56,251,1321,1504/Binding site: phosphate (Ser) (covalent) (by cAMP-dependent kinase) # F;214,288,291,297,303,309,315,327,356,502,696,954,1184,1198,1563,1702/Binding site: carb
                                                                                                                   A;Residues: 1-1951 <KAY>
A;Cross references: UNITROT:P08104; EMBL:Y00766; NID:g57210; PIDN:CAA68735.1;
A;Note: 270-Ile, 278-Leu, 355-Thr, 513-Lys, and 1059-Arg were also found C;Superfamily: sodium channel protein
C;Keywords: duplication; transmembrane protein
                                                                                                                                                                                                                                                                                                                  A;Title: Primary structure of rat brain sodium channel III deduced A;Reference number: S00320; MUID:88137594; PMID:2449363 A;Accession: S00320 A;A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sodium channel protein III - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Jun-1989 #sequence_revision 30-Jun-1989 #text_change
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A;Title: Primary structure and functional expression of a mammalian skeletal muscle A;Reference number: JN0007; MUID:90148778; PMID:2559760
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C;Species: Rattus morvegicus (Norway rat)
C;Date: 30-Sep-1990 #sequence_revision 30-Sep-1990 #text_change 09-Jul-2004
C;Accession: JN0007
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A; Introns: 91/3; 131/2; 161/2; 204/2; 235/1; 346/1;
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A; Residues: 1-1836 < RES>
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Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28;
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    Score 28; DB 2;
Pred. No. 3.6e-20;
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R;Schaller, K.L.; Krzemien, D.M.; McKenna, N.M.; Caldwell, J.H.

J. Neurosci. 12, 1370-1381, 1992

A;Title: Alternatively spliced sodium channel transcripts in brain and muscle A;Reference number: A44824; MUID:92211397; PMID:1313493

A;Accession: B44824

A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 611-662 <SCH>
A;Cross-references: GB:S97388; NID:9248225; PIDN:AAB21984.1; PID:9248226

A;Cross-references: GB:S97388; NID:9248225; PIDN:AAB21984.1; PID:9248226

A;Experimental source: skeletal muscle
A;Note: sequence inconsistent with the nucleotide translation
A;Note: sequence inconsistent with the nucleotide translation
C;Superfamily: sodium channel protein
C;Superfamily: sodium channel protein; ion transport; sodium channel; transme
                                                                                                   A; Map position: 2q23-q24.3
C; Superfamily: sodium chan
C; Keywords: duplication
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A;Experimental source: brain
A;Note: sequence extracted from
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A;Title: Toxin and kinetic profile of rat brain type III sodium channels expressed in XeA;Reference number: A60054; MUID:90251117; PMID:2160038
A;Accession: A60054
                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
A; Residues: 1-2005 < AHM>
                                                                                                                                                                                                                                                                                                                                               R;Ahmed, C.M.; Ware, D.H.; Lee, S.C.; Patten, C.D.; Ferrer-Montiel, A Proc. Natl. Acad. Sci. U.S.A. 89, 8220-8224, 1992
A;Title: Primary structure, chromosomal localization, and functional A;Reference number: A46269; MUID:92390418; PMID:1325650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Accession: A60054: R44894
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A;Residues: 1-1983 <JOH>
A;Cross-references: UNIPROT:Q64243
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  Query Match
Best Local S
Matches 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;Species: Homo sapiens (man)
;Date: 20-Oct-1993 #sequence_revision 18-Nov-1994 #text_change 21-Nov-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Accession: A46269
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100.0%; Score 28; llarity 100.0%; Pred. No. 3 Conservative 0; Mismatche
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     Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                C.D.; Ferrer-Montiel, A.V.; Schinder,
                          .7e-20;
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MYLYFVIFIIEGSFETLNLFIGVIIDNF 28

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MYLYFVIFIIFGSFFTLNLFIGVIIDNF 1476

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A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-2009 <RES,
A;Cross-references: GB:M22253; NID:g1041088; PIDN:AAA79965.1; PID:g1041089
C;Superfamily: sodium channel protein
                                                                                                                                                                                                                  A;Molecule type: DNA
A;Residues: 177-253 <SAR>
A;Residues: 177-253 <SAR>
R;Noda, M.; Numa, S.
J. Recept. Res. 7, 467-497, 1987
A;Title: Structure and function of sodium channel.
A;Reference number: I50536; MUID:87311395; PMID:2442385
A;Accession: 184764
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A;Residues: 1-2009 <NOD5
A;Cross-references: UNIPROT: P04774; GB:X03638; NID:g57216; PIDN:CAA27286.1; PID:g57217
A;Experimental source: brain
R;Sarao, R.; Gupta, S.K.; Auld, V.J.; Dunn, R.J.
Nucleic Acids Res. 19, 5673-5679, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sodium channel protein I - rat
N;Alternate names: sodium channel protein A
C;Becies: Rattus norvegicus (Norway rat)
C;Date: 30-Jun-1988 #sequence revision 30-Jun-1988 #text_change 09-Jul-2004
C;Accession: A25019; S40783; T84764
R;Noda, M; Ikeda, T.; Kayano, T.; Suzuki, H.; Takeshima, H.; Kurasaki, M.; Takahashi,
Nature 320, 188-192, 1986
A. Title. Pricense of distinct codium channels.
                                                                                                                                                                                                                                                                                                                                                                         A;Title: Developmentally regulated alternative RNA splicing of rat brain sodium channel
A;Reference number: S40782; MUID:92051314; PMID:1658739
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A;Reference number: A93377; MUID:86146901; PMID:3754035
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A:Residues: 183-188, D',190-305 <SAR>
A:Cross-references: EMBL:X61149; NID:957074; PIDN:CAA43458.1; PID:957076
C:Superfamily: sodium channel protein
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A;Residues: 1-2005 <NOD>
A;Cross-references: UNIFROT:063509
A;Experimental source: brain
R;Sarperimental source: SI, Auld, V.J.; Dunn, R.J.
A;Bescription: Developmentally regulated RNA splicing of rat brain sodium channel
A;Reference number: S24803
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Best Local Similarity 100.0%; Score 28;
Matches 28; Conservative 0; Mismatch
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C;Species: Rattus norvegicus (Norway rat)
C;Pate: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 09-Jul-2004
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                                              annel protein
ion transport; sodium channel; transmembrane protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kayano, T.; Suzuki, H.; Takeshima, H.; Kurasaki, M.; Takahashi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ion transport; sodium channel; transmembrane protein; voltage-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
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3.7e-20;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RNAs in rat brain.
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                                                    voltage-g
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RESULT 13
A56595
sodium channel alpha chain hscp - tobacco budworm (fragment)
C;Species: Heliothis virescens (tobacco budworm)
C;Date: 11-Aug-1995 #sequence_revision 11-Aug-1995 #text_cha
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A; Experiments
C; Superfamil
C; Keywords:
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A; Residues: 1-2016 < GEL>
                                                                                                                                                                                                                                              C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 09-Jul-2004
                                                                          ;Experimental source: heart
;Superfamily: sodium channel protein
;Keywords: cardiac muscle; duplication; glycoprotein; heart; ion transport; sodium chann
                                                                                                                                                                                                                                                                       sodium channel protein hHI, cardiac - human
N/Alternate names: tetrodotoxin-insensitive, voltage-dependent sodium channel,
                                                                                                                                                                                                                                                                                                                                  RESULT 12
A38195
                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Gene: SCP6
C;Superfamil;
C;Keywords: (
                                                                                                                     Cross-references: UNIPROT:Q14524; GB:M77235; NID:g184038; PIDN:AAA58644.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-1976 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 100.
25; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Reference number:
A;Accession: 156555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Accession: I56555
R;Schaller, K.L.; Krzemien, D.M.; Yarowsky, P.J.; Krueger, B.K.; Caldwell, J. Neurosci. 15, 3231-3242, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Species: Rattus no
C;Date: 26-Jul-1996
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sodium channel
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Superfamily: sodium channel protein
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Best Local (
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1449 YFVIFIIFGSFFTLNLFIGVIIDNF 1473
               4 YFVIFIIFGSFFTLNLFIGVIIDNF 28
                                                                                                                                                                                                                                                                                                                                                                  1439 YFVÍFÍÍFGSFFTLNLFÍGVÍÍÐNF 1463
                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                    4 YEVIFIIFGSFFTLNLFIGVIIDNF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1459 MYLYFVÍFTÍFGSFFTLNLFTGVÍTDNF 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nnel protein 6 - rat
Rattus norvegicus (Norway rat)
-Jul-1996 #sequence_revision 26-Jul-1996 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            duplication
                                                      Conservative
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28; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 UNIPROT:Q63541; GB:L39018; NID:g829033; PIDN:AAC42059.1; PID:g829034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       oundant sodium channel expressed in neurons and glia.
156555; MUID:95271284; PMID:7751906
                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                  89.3%; Pr
100.0%; Pr
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                                              ; Score 25; DB;

b; Pred. No. 3.7;

0; Mismatches
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                                                                       DB 2;
                                                            3.7e-17
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. 3.7e-1
                                                                 Length 2016;
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#sequence_revision 11-Aug-1995 #text_change 09-Jul-2004

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C;Accession: T31340
R;Jeziorski, M.C.; Greenberg, R.M.; Anderson, submitted to the EMBL Data Library, March 1997
A;Description: A putative voltage-gated sodium A;Reference number: Z21006
A;Accession: T31340
A;Status: preliminary; translated from GB/EMBI A;Molecule type: mRNA A;Residues: 1-1699 <JEZ>
                                                                                                                                                                voltage-gated sodium channel homolog - Bdelloura candida
C;Species: Bdelloura candida
C;Date: 02-Sep-2000 #sequence_revision 02-Sep-2000 #text_change 09-Jul-2004
C;Accession: T31340
                                                                                                                                                                                                                                                      RESULT
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C;Superfamily: sodium channel protein
C;Keywords: duplication; sodium channel; transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: mRNA
A;Residues: 711-819 <MIW>
A;Cross-references: EMBL:U71083
C;Superfamily: sodium channel p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mol. Gen. Genet. 252, 61-68, 1996
A;Title: Cloning and sequencing of the para-type sodium
A;Reference number: S72487; MUID:96397510; PMID:8804404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
A; Residues: 1-1689 < MIY>
A; Cross-references: UNIPROT: 093135;
R; Miyazaki, M.; Ohyama, K.; Dunlap,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R,Miyazaki, M.; Ohyama, K.; Dunlap, D.Y.; Matsumura, F. submitted to the EMBL Data Library. September 1996
A;Description: Cloning and sequencing of the para-type sodium channel gene from suscepti A;Reference number: S72467
A;Accession: S72467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-295 <TAY>
A;Cross-references: UNIPROT:Q25178; GB:U24236
A;Cross-references: UNIPROT:Q25178; GB:U24236
A;Experimental source: pyrethroid resistant strain PEG-87
A;Note: authors translated the codons GGC for residue 122
C;Superfamily: sodium channel protein
C;Keywords: duplication
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Accession: A56595
R;Taylor, M.F.; Heckel, D.G.; Brown, T.M.; Kreitman, M.E. Insect Biochem. Mol. Biol. 23, 763-775, 1993
A;Title: Linkage of pyrethroid insecticide resistance to A;Reference number: A56595; MUID:93386183; PMID:8397035
A;Accession: A56595
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C;Date: 29-Jul-1997 #sequence_revision 29-Aug-1997 #text_change
C;Accession: S72467; S72487
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C,Species: Blattella germanica (German cockroach)
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Pred. No.
                                           from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL:U71083; NID:g1633647; D.Y.; Matsumura, F.
                                                                                                                             March 1997
                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
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                                                                                                       BOdium
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7.2e-14;
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RESULT A33299 sodium

channel protein -

fruit fly (Drosophila melanogaster) (fragment)

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RESULT
T43167
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                                                                                                                                                                                                                                                         C;Date: 11-Jan-2000 #sequence_revision 11-Jan-2000 #text_c C;Accession: T43167  
C;Accession: T43167  
C;Accession: T43167  
#sequence_revision 11-Jan-2000 #text_c C;Accession: T43167  
#sequence_revision 11-Jan-2000 #text_c C;Accession: T43167
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                                                                                                                                                                                                          A; Residues: 1-1784 < ROS>
                                                                                                                                                                                                                         A;Status: preliminary; translated A;Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                  sodium channel protein - California market squid
C;Species: Loligo opalescens (California market squ
C;Date: 11-Jan-2000 #sequence_revision 11-Jan-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Dlb-Hajj, S.D.; Tyrrell, L.; Black, J.A.; Waxman, S.G. Proc. Natl. Acad. Sci. U.S.A. 95, 8963-8968, 1998
A;Title: NaN, a novel voltage-gated Na channel, is expressed A;Reference number: 222149; MUID:98338024; PMID:9671787
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C;Superfamily:
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A; Residues: 1-1765 < DIB>
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C;Species: Rattus norvegicus (Norway
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T42388
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Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change;
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                                                                  Conservative
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3.4e-13;
hes 0;
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3.3e-1
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sodium channel protein I, cardiac - rat
N;Alternate names: sodium channel protein (SkM2) alpha chain
C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Mar-1990 #sequence_revision 30-Mar-1990 #text_change (C;Accession: A33996; JQ0412
C;Accession: A3396; JQ0412
R;Rogart, R.B.; Cribbs, L.L.; Muglia, L.K.; Kephart, D.D.; Kaise
Proc. Natl. Acad. Sci. U.S.A. 86, 8170-8174, 1989
A;Title: Molecular cloning of a putative tetrodocoxin-resistant
A;Reference number: A33996; MUIN:90046760; PMID:2554302
          A; Title: Primary structure and
                              A;Cross-references: UNIPROT:P15389; GB:M27902; NID:g206857; PIDN:AAA42114.1; R;Kallen, R.G.; Sheng, Z.H.; Yang, J.; Chen, L.; Rogart, R.B.; Barchi, R.L. Neuron 4, 233-242, 1990
                                                                                           A; Molecule type: mRNA
A; Residues: 1-2019 < ROG>
                                                                                                                                                                                                                                                                                                                                                                      RESULT 20
A33996
                                                                                                                                    A; Status: preliminary
                                                                                                                                                      A; Reference number: A33996; A; Accession: A33996
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C;Date: 27-Oct-1995 #sequence_revision 03-Nov-1995 #text_change 09-Jul-2004
C;Accession: S54771
R;Klugbauer, N.; Lacinova, L.; Flockerzi, V.; Hofmann, F.
EMBO J. 14, 1084-1090, 1995
A;Title: Structure and functional expression of a new member of the tetrodo A;Reference number: S54771; MUID:95237189; PMID:7720699
A;Accession: S54771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: UNIPROT:Q15858; EMBL:X82835; NID:g758109; PIDN:CAA58042.1; PID:g758
C;Superfamily: sodium channel protein
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A; Residues: 1-1977 < KLU>
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S54771
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C;Bate: 20-Dec-1989 #sequence_revision 20-Dec-1989 #text.
C;Accession: A33299
R;Loughney, K.; Kreber, R.; Ganetzky, B.
Cell 58, 1143-1154, 1989
A;Title: Molecular analysis of the para locus, a sodium A;Reference number: A33299; MUID:89376565; PMID:2550145
A;Accession: A33299
A;Status: preliminary
A;Mclession: A33299
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A;Crosm-references: FlyBase:FBgn0003036
C;Superfamily: sodium channel protein
C;Keywords: duplication; phosphoprotein; transmembrane protein
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A; Residues: 1-1820 <LOU>
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Best Local
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Best Local S
Matches 21
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100.0%; Pred. No.
        expression of a
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        sodium
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  characteristic
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A;Molecule type: mRNA
A;Residues: 1-2049 <OKA>
A;Residues: 1-2049 <OKA>
A;Cross-references: UNIPROT:Q25150; EMBL:D17311; PIDN:BAA04133.1
C;Superfamily: sodium channel protein
C;Keywords: sodium channel; transmembrane protein
                                                                                                                                                                                                                                                                                                                  R;Okamura, Y; Ono, F; Okagaki, R; Chong, J; Mandel, G. Neuron 13, 937-948, 1994

A;Title: Neural expression of a sodium channel gene requires A;Reference number: Z22320; MUID:95033215; PMID:7946338
A;Accession: T43161
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T43161
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(;Superfamily: sodium channel protein
C;Superfamily: sodium channel protein
C;Keywords: alternative splicing; glycoprotein; phosphoprotein; sodium channel;
F;302,314,332,967,1451,1470/Binding site: carbohydrate (Asn) (covalent) #status
F;541,1208,1582/Binding site: phosphate (Ser) (covalent) #status predicted
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A;Residues: 1-2108 <WIL>
A;Cross-references: UNIPROT:Q94615;
A;Experimental source: strain Cooper
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Cracession: S72458
Cracession: S72458
Artinez-Torres, D.; Hick, C.A.; Devonshire, Mol. Gen. Genet. 252, 51-60, 1996
Artitle: Identification of mutations in the housefly para-type scales of the state of the state of the state of the scales of the state of the scales of the scal
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C;Date: 24-Oct-1998 #sequence_revision 24-Oct-1998 #text_change 09-Jul-2004
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A;Accession: JQ0412
A;Molecule type: mRNA
A;Residues: 1-479,481-1712,'T',1714-1963,'R',1965-2019 <KAL>
A;Experimental source: muscle
C;Superfamily: sodium channel protein
C;Keywords: cardiac muscle; duplication; heart; sodium chann
                                                     Query Match
Best Local :
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                                           64.3%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sea squirt (Halocynthia roretzi)
             0,
                                        Score 18;
Pred. No.
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Pred. No.
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      3.9e-10;
hes 0;
                                                                      DB 2;
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3.9e-13;
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                                                               Length 2049;
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11 FGSFFTLNLFIGVIIDNF

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RESULT 25
CHEE
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A; Residues: 1-1810 <WHI>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         probable voltage-gated sodium channel - Aiptasia pallida
C;Species: Aiptasia pallida
C;Date: 02-Sep-2000 #sequence_revision 02-Sep-2000 #text
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A; Residues: 1-362;363-626;627-1321 <SAL>
A; Residues: NIPROT: Q27930; EMBL: X14394
A; Cross-references: UNIPROT: Q27930; EMBL: X14394
R; Salkoff, L.; Butler, A.; Wei, A.; Scavarda, N.; Giffen, Science 237, 744-749, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Salkoff, L.; Butler, A.; Scavarda, N.; Wei, A.
Nucleic Acids Res. 15, 8569-8572, 1920
A;Title: Nucleotide sequence of the putative sodium channel
A;Reference number: S04029; MUID:88040482; PMID:2444928
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                                                                                                                                                                                                                                                                                                       C; Superfamily: sodium channel protein
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A;Cross-references: EMBL:X14394
A;Note: part of this sequence was confirmed by mRNA sequencing
A;Note: the authors' translation is shown at position 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Accession: S04029; A60165
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A;Reference number: A60165; MUID:87292090; PMID:2441469
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sodium channel protein - electric eel
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Best Local
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Introns: 237/2; 310/3; 362/3; 414/3; 471/3; 531/3; 581/1; 626/3; 751/2; 801/1; 908/1;
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100.0%; Pr
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Pred. No.
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Search completed: January Job time: 19 secs

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A;Residues: 1-1820 <NO2>
A;Cross-references: GB:M22252; NID:g1041048; PIDN:AAA79960.1; PID:g1041049
C;Comment: This membrane glycoprotein mediates the voltage-dependent sodium-ion permeabill so the membrane, the protein forms a sodium-selective channel through which sodium ions ni C;Comment: This sequence contains four highly homologous internal repeats (excluding resillard repeat has a similar overall structure containing six subregions located in identic has a net positive charge (S4), and one is neutral (S2).
C;Comment: The four repeating units are thought to be oriented pseudosymmetrically across e. The presence of four homologous structures within this molecule is consistent with the C;Comment: Available data suggest that activation and inactivation gates are located near 955 might, in conjunction with the positively charged residues of S4, act as a voltage se C;Superfamily; sodium channel protein
                                                                                                                                                                                                                                          C;Reywords: duplication; glycoprotein; ion transport; membrane protein; F;111-419,555-807,989-1281,1311-1597/Region: duplication internal repeat F;111-141,555-805,989-1019,1311-1341/Region: S1 of repeats I through IV F;150-171,597-620,1033-1057,1353-1376/Region: S2 of repeats I through IV F;177-197,626-643,1062-1079,1381-1398/Region: S3 of repeats I through IV F;244-224,651-671,1092-1112,1417-1347/Region: S4 of repeats I through IV F;244-264,651-711,1132-1152,1454-1474/Region: S5 of repeats I through IV F;379-402,767-790,1236-1264,544-1667/Region: S6 of repeats I through IV F;379-402,767-790,1236-1264,544-1667/Region: S6 of repeats I through IV F;205,278,288,317,591,690,797,1160,1174,1806/Binding site: carbohydrate
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A;Title: Structure and function of sodium channel.
A;Reference number: ISO536; MUID:87311395; PMID:2442385
A;Accession: ISO536
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;Date: 28-May-1986 #sequence_revision 28-May-1986 #text_change 09-Jul-2004
;Accession: A03178; ISO536
;Noda, M.; Shimizu, S.; Tanabe, T.; Takai, T.; Kayano, T.; Ikeda, T.; Taka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;Residues: 1-1820 <NOD>
;Cross-references: UNIPROT:P02719; GB:X01119; NID:g62776;
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   1253 FFTLNLFIGVIIDNF
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   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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Q90z29
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5rx9 homo sapien
112085 homo sapi
3541 rattus norv
          3 mus musculu
0 rattus norv
0 homo sapien
4 oryctolagus
2 rattus norv
                                                                                                                                                                                   7 homo sapien
6 homo sapien
6 homo sapien
0 homo sapien
5 rattus norv
7 cynops pyrr
8 homo sapien
8 rattus norv
                                                                                                                                          0 sternopygus
6 sternopygus
1 takifugu pa
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8 sternopygus
4 sternopygus
9 homo sapien
0 rattus norv
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Q86UR3
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Q96J69
C1N5 HUMAN
Q75RY0
BAD12084
Q8MMPB
Q7PJH1
Q9UEC5
Q901Z7
Q90Z27
             ALIGNMENTS
                                                   Aag81287 hirudo me
Q8is97 varroa dest
P02719 electrophor
Q86d77 varroa dest
P90670 aplysia cal
Q90225 sternopygus
O62604 polyorchis
Q17314 cyanea capi
                                                                                                                                                                                                            O7pf76 anopheles g
Q8mmc7 drosophila
O44930 aiptasia pa
O7qiv0 anopheles g
Q9bmg4 blattella g
Q9w0y8 drosophila
Q28371 equus cabal
Q6vve1 hirudo medi
                                                                                                                                                                                                                                                                                                              Q25150 halocynthia
Q7jnB7 drosophila
Q6yve0 hirudo medi
Aaq81289 hirudo me
Q7pf76 anopheles g
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Q8izc9 homo sapien
Q96j69 homo sapien
Q14524 homo sapien
Q75ry0 homo sapien
Bad12084 homo sapi
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925377
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Q7pmt4
Q7pjh0
Q7pjh0
Q9uhm0
Q93:135
Q94584
Q02037
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Q7pjh1
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Q86ur3
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Q96j69
Q14524
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Q6vve2 hirudo medi
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5 blattella g

7 blattella g

7 pediculus h

8 pediculus h

9 pediculus h

4 aedes albop

3 aedes aegyp

8 pediculus h

6 musca domes

5 musca domes

6 drosophila

1 chattella g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7 sternopygus
1 boophilus m
4 anopheles g
6 anopheles g
7 homo sapien
5 blattella g
8 heliothis v
7 bdelloura c
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musculu
loligo opal
homo sapien
homo sapien
rattus norv
mattus norv
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1 anopheles g
5 mus musculu
8 heliothis v
1 aedes aegyp
6 aedes albop
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rattus norv
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A Jover E., Shah V.;

A Jover E., Shah V.;

AL Submitted (JUN-1995) to the EMBL/GenBank/DDBJ databases.

CC -!- SUBCELLULAR LOCATION: Integral membrane protein (By similarity DB EMBL; L42341; AAA67695.1; -- SIMILARITY: Belongs to the sodium channel family.

DR GO; GO:0016021; C:integral to membrane; IEA.

DR GO; GO:0001518; C:voltage-gated sodium channel complex; IEA.

DR GO; GO:0005261; F:cation channel activity; IEA.

DR GO; GO:0005248; F:voltage-gated sodium channel activity; IEA.

DR GO; GO:0006812; P:cation transport; IEA.

DR GO:0006814; P:sodium ion transport; IEA.

DR InterPro; IPR001682; Ca/Na pore.

DR InterPro; IPR001682; Ca/Na pore.

DR InterPro; IPR001682; J:on trans.

                                                         RESULT 1
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DT 001-M
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R EMBL; L42339; AAA67107.1; -.

R HSSP; p04775; lByY.

R MGD; MGI:98246; Scnla.

GO; GO05624; C:membrane fraction; IDA.

R InterPro; IPR001682; Ca/Na pore.

R InterPro; IPR001582; Ca/Na pore.

R InterPro; IPR005821; Ion_trans.

R InterPro; IPR005821; Ion_trans.

R InterPro; IPR005820; M+channel_nlg.

InterPro; IPR005820; M+channel_nlg.

R InterPro; IPR01586; Na_trans_assoc.

Pfam; PF00520; Ion_trans].

PFfam; PF00512; Na_trans_assoc; 1.

W JON transport; Ionic channel; Transmembrane; Transport.

SEQUENCE 431 AA; 49466 MW; 9CD841FF73D1D9B7 CRC64;
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Matches 28
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01-NOV-1996 (TrEMBLrel. 26, Las
01-MAR-2004 (TrEMBLrel. 26, Las
Sodium Channel (Fragment).
Mus musculus (Mouse)
Eukaryota; Metazoa; Chordata; C.
Mammalia; Eutheria; Rodentia; S.
                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=10090;
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Q62206;
Q62206;
Q1-NOV-1996 (TrEMBLrel. 0:
Q1-NOV-1996 (TrEMBLrel. 0:
Q1-MAR-2004 (TrEMBLrel. 2:
Sodium channel 3:
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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[1]
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100.0%; Pred. No. 1.6e-19;
. Mismatches 0;
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Sciurognathi; Muridae; Murinae; Mus
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Sciurognathi; Muridae; Murinae; Mus
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Q90Z28
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Q90Z29
ID Q90Z
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EMBL; AF378140; AKX5438.1; -...

GO; GO:0016021; C:integral to membrane; IEA.

RO; GO:0005261; F:cation channel activity; IEA.

R GO; GO:0005812; P:cation transport; IEA.

R InterPro; IPR001682; Ca/Na pore.

R InterPro; IPR001682; Ca/Na pore.

R InterPro; IPR005821; Ion trans.

R InterPro; IPR005821; Ion trans.

R InterPro; IPR005820; M+Channel nlg.

R InterPro; IPR005820; M+Channel nlg.

R Ffam: PF00520: Ion trans. assoc.
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Best Local Similarity 100.0%; F
Matches 28; Conservative 0;
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Q90Z29;
01-DEC-2001 (TrEMBLrel. 19, Cr
01-DEC-2001 (TrEMBLrel. 19, La
01-MAR-2004 (TrEMBLrel. 26, La
Sodium channel 2 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00520; Ion trans; 2. - Pfam; PF06512; Na trans_assoc; 1.

Ion transport; Ionic channel; Transmembrane; Transport.

NON TER 1 1 1

NON TER 742 742

SEQUENCE 742 AA; 84353 MW; 7F4B30038D3F2AC4 CRC64;
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Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Gymnotiformes;
Sternopygidae; Sternopygus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Insulus = 21310016; PubMed=11416226;
LOpreato G.F., Lu Y., Southwell A., Atkingon N.S.,
Wilcox T.P., Zakon H.H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. MEDLINE=21310016;
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Pfam; PF00520; Ion_trans; 1.
Pfam; PF00520; Ion_trans; 1.
Pfam; PF005170; NACHANNEL.
SWART; SW00170; NACHANNEL.
SWART; SW00015; IQ; 1.
PROSITE; PS50096; IQ; 1.
Ionic Channel; Sodium channel; Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transport; Voltage-gated channel.
NON TER 510 510
SEQUENCE 510 AA; 58397 MW; 02:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  641
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                  PRT;
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Pred. No. 1.8e-19;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hillis D.M.,
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Q804F4;
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7 01-MAR-2004 (TrEMBLrel. 26, La
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Best Local Similarity
Matches 28; Conserv
                                                                                                                                                          GO; GO:0005261; I
GO; GO:0005245; I
GO; GO:0006816; I
GO; GO:0006812; I
InterPro; IPRO01
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SEQUENCE 751
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Pfam;
                                                                 GO; GO:0006812; P:Cation transport; IEA.
InterPro; IPR001682; Ca/Na pore.
InterPro; IPR002111; Cat Channel TrpL.
InterPro; IPR002077; Ca Channel alpha.
InterPro; IPR005821; Ion trans.
InterPro; IPR005820; M+Channel nlg.
                                                                                                                                                                                                                                                                                                                                                           Lu Y. Lopreato G.F., Zakon H.H.;
Submitted (NOV-2002) to the EMBL/GenBank/DDBJ databases.
-i- SUBCELLULAR LOCATION: Integral membrane protein (By similarity)
-i- SIMILARITY: Belongs to the calcium channel alpha-1 subunits
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Stėrnopygus macrurus.
Bukaryota; Metazoa; Chordata;
Actinopterygii, Neopterygii; Sternopygidae; Sternopygus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     88
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata;
Actinopterygii; Neopterygii; Teleostei;
Sternopygidae; Sternopygus.
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InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR005821; Ion trans.
InterPro; IPR005820; M+Channel nlg.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=21310016; PubMed=11416226; Lopreato G.F., Lu Y., Southwell A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=77841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Evolution and divergence of sodium channel Proc. Natl. Acad. Sci. U.S.A. 98:7588-7592(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
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                                                    InterPro;
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GO:0016021; C:integral to membrane; IEA
GO:0005261; F:cation channel activity;
GO:0006812; P:cation transport; IEA.
                                                                                                                                                                                                                                                                     GO:0016021;
GO:0005891;
                                                                                                                                                                                                                                                                                                                                         family.
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PF06512; Na_trans_assoc;
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Ion_trans; 3.
Na_trans_assoc;
                                                                                                                                                                                                     C:integral to membrane; IEA.
C:voltage-gated calcium channel
F:cation channel activity; IEA.
F:voltage-gated calcium channel
P:calcium ion transport; IEA.
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84598 MW;
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Last
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Teleostei;
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Pred. No.
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annotation update)
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Ostariophysi;
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Ostariophysi; Gymnotiformes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2.5e-1
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Best Local
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MET-1313.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CIN4_HUMAN STANDARD; PRT; 1836 AA.
P35499; Q15478; Q16447; Q726B1;
01-JUN-1994 (Rel. 29, Created)
29-MAR-2004 (Rel. 43, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
Sodium channel protein type IV alpha subunit (Voltage-gated sodium sodium channel protein, skeletal mus
                   "Temperature-sensitive mutations in the III-IV cytoplasmic of the skeletal muscle sodium channel gene in paramyotonia
                                                             McClatchey A.I., van den Bergh P., Verellen C., McKenna-Yasek D., Rao Brown R.H. Jr., Gusella J.F.;
                                                                                                                                                                                                                                                                          McClatchey A.I., Gusella J.F.;
                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A., AND VARIANT A MEDLINE=93338444; PubMed=1339144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Sequence and genomic structure of the sodium channel alpha subunit gene on 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wang J., Rojas C.V.,
Hoffmann E.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. MEDLINE=92134303;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=92246457; PubMed=1315496; George A.L. Jr., Komisarof J., Ka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A., AND TISSUE=Skeletal muscle;
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Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                                                                                                    Tsujino A., Maertens C., Ohno K., Cannon S.C., Engel A.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=22684480;
                                                                                                                          MEDLINE=92154689; PubMed=1310898;
                                                                                                                                                                                                                                                  "The genomic
                                                                                                                                                                                                                                                                                                                                                                              "Myasthenic syndrome caused by mutation of the SCN4A Proc. Natl. Acad. Sci. U.S.A. 100:7377-7382(2003).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ann. Neurol.
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22684480; PubMed=12766226;
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                                                                                                                                                                                                                                                    structure of
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                                                                                                                                                                                                           1:521-521(1992)
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Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VARIANT MYASTHENIC SYNDROME GLU-1442, AND VARIANTS
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Pred.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kallen R.G., Barchi R.L.;
t human skeletal muscle vo
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182:794-801(1992)
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K., Haines J.L., Bi
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Ptacek L.J., Gouw L., Kwiecinski H., McMan
Barohn R.J., George A.L. Jr., Barchi R.L.,

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Barchi R.L., Robertson M., Lep
"Identification of a mutation
periodic paralysis.",
Cell 67:1021-1027(1991).
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the SCN4A gene (V6:2001-2004(1995)
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Griggs R.C., T
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permeability of excitable membranes. Assuming opened or closed conformations in response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na+ ions may pass in accordance with their electrochemical and innervated skeletal muscle.

In SUBUNIT: Muscle sodium channel may be present in both denervated and innervated skeletal muscle.

Is SUBUNIT: Muscle sodium channels contain an alpha subunit and a syntrophin SNTA1, SNTB1 and SNTB2 (By similarity).

SUBCELLULAR LOCATION: Integral membrane protein.

DOMAIN: The sequence contains 4 internal repeats, each with 5 segments (S1, S2,S3,S5,S6) and one positively charged characterized by a series of positively charged amino acids at every third position.

PISEASE: Defects in SCNAA are the cause of paramyotonia congenita sodium channel disease characterized by myotonia, increased by exposure to cold, intermittent flaccid paresis, not necessarily
                                                                                                                                                                                                                                                     "Sodium channel gene mutations in hypokalemic uncommon cause in the UK.", Neurology 57:1323-1325(2001).

-I- FUNCTION: This protein mediates the voltage conformation of excitable membrance "--
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Tollar L.L., Ebers G.C.;
"A novel sodium channel mutation
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SUBUNIT: Muscle sodium channels contain an alpha subunit and a smaller beta subunit. Interacts with the PDZ domain of the syntrophin SNTA1, SNTB1 and SNTB2 (By similarity).

SUBCELIULAR LOCATION: Integral membrane protein.

Hodwain: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1, S2, S3, S5, S6) and one positively charged segment (S4). Segments S4 are probably the voltage-sensors and are characterized by a series of positively charged amino acids at
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05-JUL-2004 (Rel. 44, Last annotation update)
Sodium channel protein type IV alpha subunit (Voltage-channel alpha subunit Nav1.4) (Sodium channel protein, alpha-subunit) (Mu-1).
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Mammalia; Eutheria;
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SIMILARITY: Belongs to the sodium channel family.
SIMILARITY: Contains 1 IQ domain.
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Sciurognathi; Muridae;
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Pred. No.
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; Murinae; Rat
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Best Local S
Matches 28
Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; (
Mammalia; Eutheria; Rodentia; S
NCBI TaxID=10116;
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070611;
01-AUG-1998
01-AUG-1998
01-MAR-2004
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PRINTS; PR01665; NACHANNEL4.
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voltage-gated sodium cha
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Pred. No.
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Sciurognathi; Muridae; Murinae; Rat
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(Potential).
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              Murinae; Rattus
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R GO; GO:0016021; C:integral to membrane; IEA.
R GO; GO:0001518; C:voltage-gated sodium channel comy
R GO; GO:0005261; P:cation channel activity; IEA.
DR GO; GO:0005248; P:voltage-gated sodium channel act
DR GO; GO:0006812; P:cation transport; IEA.
DR GO; GO:0006814; P:sodium ion transport; IEA.
DR InterPro; IPR001682; Ca/Na pore.
DR InterPro; IPR001682; Ion_trans.
DR InterPro; IPR005821; Ion_trans.
DR InterPro; IPR005821; Ion_trans.
DR InterPro; IPR001682; Ma_channel.
DR InterPro; IPR001682; Na_channel.
DR InterPro; IPR001696; Na_channel.
DR InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
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InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
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Best Local (
                        HSSP;
MGD; N
                                                       "The mouse heart sodium channel (mH1): cloning and charact alternatively spliced variants.";
Am. J. Physiol. Heart Circ. Physiol. 282:H1007-H1017(2002)
-!- SUBCELLULAR LOCATION: Integral membrane protein (By since SIMILARITY: Belongs to the sodium channel family.
HSSP; P04775; CAC17146.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9ER60;
Q9ER60;
01-MAR-2001
                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
STRAIN=balb/c; TISSUE=Heart;
MEDLINE=21823196; PubMed=11834499;
Zimmer T., Benndorf K.;
                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Name=Scn4a;
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PROSITE; PS50096; IQ; 1.

Ion transport; Ionic channel; Sodium channel; Transmembrane;
Transport; Voltage-gated channel.

SEQUENCE 1840 AA; 208823 MW; BIDFFA538E264B40 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=10090;
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Pfam; PF00612; IQ; 1.
Pfam; PF00612; Na trans assoc;
PRINTS; PR0170; NACHANNEL.
PRINTS; PR01665; NACHANNEL4.
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MEDLINE=98273645; PubMed=9613589;
Diss J. K.J., Stewart D., Fraser S.P., Black J.A., Dibb-Hajj S.,
Waxman S.G., Archer S.N., Djamgoz M.B.A.;
"Expression of skeletal muscle-type voltage-gated Na+ channel in the strain prostate cancer cell lines.";
FEBS Lett. 427:5-10(1998).

FEBS Lett. 427:5-10(1998).

-!- SUBCELLULAR LOCATION: Integral membrane protein (By similar in SIMILARITY: Belongs to the sodium channel family.
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; MGI:98250; Scn4a.
GO:0016021; C:integral to membrane; IEA
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P04775; 1BYY.
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Rodentia;
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Last
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Pred. No. 5.1
0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence update)
annotation update)
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RESULT 10
CIN3 RAT
AC P08104;
DT 01-AUG-1
DT 01-AUG-1
DT 01-OCT-2
DE SODMING
DE CHANNEL
DE SUBUNIT
ON RATTUS T
OC MARMALIA
OX NOBI TAS
RN SEQUENCE
RC STRAIN=F
RA KAYANO 1
RT "Primary
CC -1- FUNG
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                                       of excitable membranes. Assuming opened or closed conformations in conference to the voltage difference across the membrane, the procean forms a sodium-selective channel through which Na(+) ions converted forms a sodium-selective channel through which Na(+) ions converted forms a sodium-selective channel through which Na(+) ions consists of a large polypeptide and 2-cisupunitar The sodium channel consists of a large polypeptide.

I smaller ones, This sequence represents a large polypeptide.

I smaller ones, This sequence represents a large polypeptide.

I smaller ones, This sequence represents a large polypeptide.

I subcellular Location: Integral membrane protein.

I hydrophobic segments (S1,S2,S3,S5) and one positively charged characterized by a series of positively charged amino acids at every third position.

I subcarity: Belongs to the sodium channel family.
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Matches 28
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InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR002821; Ion trans.
InterPro; IPR005821; Ion Trans.
InterPro; IPR005820; M-channel nlg.
InterPro; IPR001696; Na channel.
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Pfam; PF00612; IQ; 1.
Pfam; PF06512; Na trans assoc; 1
PRINTS; PR00170; NACHANNEL.
PRINTS; PR01665; NACHANNEL4.
SMART; SM00015; IQ; 1.
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01-AUG-1988 (Rel. 08, Last sequence update)
01-OCT-2004 (Rel. 48, Last sequence update)
Sodium channel protein type III alpha subunit Channel alpha subunit Navl.3) (Sodium channel subunit) (Voltage-gated sodium channel subtype
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=88137594; PubMed=2449363;
Kayano T., Noda M., Flockerzi V., Takal
"Primary structure of rat brain sodium
CDNA sequence.";
FEBS Lett. 228:187-194(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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Ion transport; Ionic channel; Sodium channel; Transmembrane;
Transport; Voltage-gated channel.

SEQUENCE 1841 AA; 208796 MW; 0766DFD33A9E0E55 CRC64;
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PROSITE; PS50096;
                   SWISS-PROT
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              entry
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus.
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Pred. No. 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
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  through
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collaboration
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between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions at all its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).

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InterPro; IPR001682; Ca/Na_pore.

R InterPro; IPR002111; Cat_channel_Trpl.

R InterPro; IPR002821; Ion trans.

R InterPro; IPR000048; IQ_region.

R InterPro; IPR000048; IQ_region.

R InterPro; IPR001696; Na_channel_nlg.

R InterPro; IPR010526; Na_trans_assoc.

R Pfam; PF00520; Ion trans; 4.

R Pfam; PF00520; Ion trans; 4.

R Pfam; PF00512; Na_trans_assoc; 1.

R Pfam; PF06512; Na
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PDB; 1QG9; NMR; A=156-176.
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                  Similarity
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Matches 28
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GO; GO:001518; C:voltage-gated sodium channel co
GO; GO:000261; P:cation channel activity; IEA.
GO; GO:0005248; P:voltage-gated sodium channel ac
GO; GO:0006812; P:cation transport; IEA.
GO; GO:0006812; P:cation transport; IEA.
InterPro; IPR001682; Ca/Na_pore.
InterPro; IPR001682; Ca/Na_pore.
InterPro; IPR002111; Cat_channel TrpL.
InterPro; IPR005821; IOn_trans.
InterPro; IPR005821; IO_region.
InterPro; IPR005821; M-channel Tlg.
InterPro; IPR005821; M-channel Tlg.
Voltage-gated Bodium Channel al
Name=SCNIA;
Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; C
Mammalia; Eutheria; Primates; C
NCBI TaxID=9606;
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01-JUN-2001
01-MAR-2004
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Pfam; PF00612; IQ; 1.
Pfam; PF06512; Na trans assoc;
Pfints; PR00170; NaCHANNEL.
SMART; SM00015; IQ; 1.
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
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Submitted (J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AF225986; AAK00218.1; HSSP; P04775; 1BYY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Transport;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ion transport; Ionic channel; Sodium channel; Transmembrane; Transport; Voltage-gated channel. 
SEQUENCE 1951 AA; 221517 MW; 99AD4C032CE124AB CRC64;
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InterPro; IPR010526;
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Na_trans_assoc.
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EMBL/GenBank/DDBJ databases.
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Pred. No.
                                                                        Catarrhini; Hominidae;
                                                                                                        Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
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annotation update)
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ACCOMPANDATION OF THE PROPERTY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
CIN3_HUMAN
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Q9NY46; Q16142, Q9BZB3; Q9C006; Q9NYK2; Q9UPD1; Q9Y6P4;
16-OCT-2001 (Rel. 40, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
01-OCT-2004 (Rel. 45, Last annotation update)
Sodium channel protein type III alpha subunit (Voltage-gated channel alpha subunit Navl.3) (Sodium channel protein, brain subunit) (Voltage-gated sodium channel protein, brain subunit) (Voltage-gated sodium channel subtype III).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000100; Ribonuclease
Pfam; PP00520; Ion trans; 4.
Pfam; PF00612; IQ; 1.
Pfam; PF06512; Na trans assoc; 1.
PRINTS; PR00170; NACHANNEL.
PRINTS; PR01664; NACHANNEL1.
SMART; SM00015; IQ; 1.
  SEQUENCE FROM N.A. (ISOFORMS 1; 2; 3 AND
                                                          Submitted
                                                                                 Jeong S.-Y., Goto J., Kana: "Cloning of cDNA for human SCN3A.";
                                                                                                                                                                     Chen Y., Dale T.J., Romanos M.A., Whitaker W.R., Xie X., "Cloning, distribution and functional analysis of the hur III sodium channel from human brain."; Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
TISSUE=Brain;
                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                     Name=SCN3A; Synonyms=NAC3;
Homo sapiens (Human).
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PROSITE; PS00648; RIBONUCLEASE P; UNKNOWN 1.

Ion transport; Ionic channel; Sodium channel; Transmembrane;

Transport; Voltage-gated channel.

Transport; Voltage-gated channel.

Transport; Voltage-gated channel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GO:0016021; C:integral to membrane; IEA.
GO:0001518; C:voltage-gated sodium channel complex;
GO:0005261; F:cation channel activity; IEA.
GO:0005248; F:voltage-gated sodium channel activity;
GO:0006812; P:cation transport; IEA.
GO:0006814; P:sodium ion transport; IEA.
GO:0006814; P:sodium ion transport; IEA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                     (JAN-2000)
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                                                   to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
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                                                                                        voltage-gated
                                         EMBL/GenBank/DDBJ databases.
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Pred. No.
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EMBL;
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                                                                                                                                                                                                                                                                                                                                               Name=2; Synonyms=6A-12;
IsoId=O9NY46-2; Sequence=VSP_001034;
Name=3; Synonyms=6N-12+12b;
IsoId=O9NY46-3; Sequence=VSP_001033;
Name=4; Synonyms=6N-12;
IsoId=O9NY46-4; Sequence=VSP_001033;
Name=4; Synonyms=6N-12;
IsoId=O9NY46-4; Sequence=VSP_001033, VSP_001034;
-i- DOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1,82,S3,S5,S6) and one positively charged segment (S4). Segments S4 are probably the voltage-sensors and are characterized by a series of positively charged amino acids at every third position.
-i- SIMILARITY: Contains 1 IQ domain.
                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a cobetween the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Endogenous sodium current in HEK293 cells: expression of endogenous currents by stable subunit.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Targeted gene walking by low s assignment of a putative human chromosome 2q24-31.";
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Tonkovich G.S., Kyle J.W.;
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Ingram V.M.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=94211784; PubMed=8159690; Malo M.S., Srivastava K., Andrese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE=Placenta
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Isolation of a human-brain sodium-channel of the subtype III alpha-subunit.";
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  ; AJ251507; CAB85895.1;
; AF225987; AAK00219.1;
; AF330115; AAG53414.1;
; AF330115; AAG53414.1;
; AF330119; AAG53414.1;
; AF330119; AAG53414.1;
; AF330120; AAG53414.1; J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FUNCTION: Mediates the voltage-dependent sodium ion permeability of excitable membranes. Assuming opened or closed conformations response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) ion may pass in accordance with their electrochemical gradient. SUBUNIT: The sodium channel consists of a large polypeptide and SUBCELLULAR LOCATION: Integral membrane protein.

ALTERNATIVE PRODUCTS:
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ve human brain sodium channel
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GO; GO:0001518; C:voltage-gated sodium ch
GO; GO:0005248; F:voltage-gated sodium ch
GO; GO:0006814; P:sodium ion transport; N
InterPro; IPR001682; CalMa pore.
InterPro; IPR001682; CalMa pore.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005820; M-Channel nlg.
InterPro; IPR001596; Na_trans_assoc.
Pfam; PP00512; Ion_trans; 4.
Pfam; PP00512; Na_trans_assoc; 1.
Pfam; PP00512; Na_tran
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MIM; 182391; -.
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      RESULT 14
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      A TO A PRINT REPORT OF THE PROPERTY OF THE PRO
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Best Local S
Matches 28
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MEDLINE-92390418; PubMed=1325650;
MEDLINE-92390418; PubMed=1325650;
Ahmed C.M., Ware D.H., Lee S.C., Patten C.D., Ferrer-Montiel A.V.,
Schinder A.F., McPherson J.D., Wagner-Mcpherson C.B., Wasmuth J.J.
Kvans G.A., Montal M.;
Evans G.A., Montal M.;
"Primary structure, chromosomal localization, and functional
expression of a voltage-gated sodium channel from human brain.";
Proc. Natl. Acad. Sci. U.S.A. 89:8220-8224(1992).
                                                                                                            SEQUENCE FROM N.A. (ISOFORMS 1 AND 2).

MEDLINE=21142400; PubMed=11245985; DOI=10.1016/S0378-1119(00)00594-1;
Kasai N., Fukushima K., Ueki Y., Prasad S., Nosakowski J.,
Kasai K.-I., Sugata A., Nishizaki K., Meyer N.C., Smith R.J.H.;
"Genomic structures of SCN2A and SCN3A - candidate genes for deafness
at the DFNA16 locus.";
Gene 264:113-122(2001).
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SEQUENCE OF 1-89 FROM N.A. Lu C.-M., Eichelberger J.S., E "Isolation of the 5'-flanking
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Mammalia, Eutheria, Primates, Catarrhini, Hominidae,
NCBI TaxID=9606,
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Han J., Lu C.-M., Brown G.B., Rado T.A., Direct amplification of a single dissected polymerase chain reaction: a human brain society.
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SEQUENCE OF 1702-1772 FROM N.A.
MEDLINE=91110524; PubMed=1846440;
Han J. Lu C.-M., Brown G.B., Radi
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ISSUE=Brain;
                                 ## M94055; AAA18895.1;
AFG059683; AAC14574.1;
AFG059683; AAC14574.1;
AFG27226; AAG53413.1;
AFG27226; AAG53413.1;
AFG27229; AAG53413.1;
AFG27229; AAG53413.1;
AFG27231; AAG53413.1;
AFG27231; AAG53413.1;
AFG27232; AAG53413.1;
AFG27234; AAG53412.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Name=2; Synonyms.Neonatal, 6N;
ISOId=209250-2; Sequence-VSP 001032;
DOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1,S2,S3,S5,S6) and one positively charged segment (S4). Segments 84 are probably the voltage-sensors and are characterized by a series of positively charged amino acids at every third position.

SIMILARITY: Belongs to the sodium channel family.

SIMILARITY: Contains 1 IQ domain.
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REMBL; AF327228; AAG53412.1; JOINED.
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Takahashi H., Numa S.;

"Existence of distinct sodium channel messenger RNAs in rat brain.";

Nature 320:188-192(1986).

"C -!- FUNCTION: Mediates the voltage-dependent sodium ion permeability of excitable membranes. Assuming opened or closed conformations in response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) ions may pass in accordance with their electrochemical gradient.

C -!- SUBUNIT: The sodium channel consists of a large polypeptide and 2-3 smaller ones. This sequence represents a large polypeptide.

C -!- SUBCELIULAR LOCATION: Integral membrane protein.

C -!- DOMALN: The sequence contains 4 internal repeats, each with 5 polycophobic segments (S1, S2, S3, S5, S6) and one positively charged segment (S4). Segments S4 are probably the voltage-sensors and are characterized by a series of positively charged amino acids at every third position.

C -!- SIMILARITY: Contains 1 IQ domain.
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Sciurognathi; Muridae; Murinae; Rattus
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PF06512; Na_trans_a;
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                                  n 100.0%;
Similarity 100.0%;
28; Conservative (
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j [PR002111; Cat_channel_TrpL.
j; [PR0005821; Ion_trans.
j; [PR000848; IO_region.
o; [PR000488; IO_region.
o; [PR001696; Na_channel nlg.
o; [PR001696; Na_trans_assoc.
o; [PR010522; Na_trans_assoc.
  MYLYFVIFIIFGSFFTLNLFIGVIIDNF
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                                                                                        license@isb-sib.ch).
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Pred. No. 5.5
0; Mismatches
                                                                                channel; Transmembrane;
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                                                            2005;
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RESULT 15

CIN2 RAT STANDARD; PRT; 2005 AA. P04775; P13-AUG-1987 (Rel. 05, Created) 13-AUG-1987 (Rel. 05, Last sequence update) 01-OCT-2004 (Rel. 45, Last annotation update) Sodium channel protein type II alpha subunit (channel alpha subunit Nav1.2) (Sodium channel

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MYLYEVIFIIFGSEFTLNLFIGVIIDNF 28

Query Match Best Local & Matches 28

h 100.0%; Similarity 100.0%; 28; Conservative

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Score 28; DE Pred. No. 5.5); Mismatches

DB 1; .5e-19;

Length 2005; Indels

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-vsp_001032.

isoform 2).

SEQUENCE FROM N.A.
MEDLINE=86146901; PubMed=3754035;
Noda M., Ikeda T., Kayano T., Suzuki H.,

Takeshima

Ξ.

NCBI_TaxID=10116;

Rattus norvegicus (Rat). Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;

subunit) Name=Scn2a;

This SWISS-PROT entry is copyright. It is produced between the Swiss Institute of Bioinformatics and the European Bioinformatics Institute. There are ruse by non-profit institutions as long as its comodified and this statement is not removed. Usage entities requires a license agreement (See http://w

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RESULT 17
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Q9YGN7
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Best Local S
Matches 28
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GO; GO:0001518; C:voltage-gated sodium channel com
GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:0005248; F:voltage-gated sodium channel act
GO; GO:0005248; F:voltage-gated sodium channel act
GO; GO:0006812; P:cation transport; IEA.
InterPro; IPR001682; Ca/Na_pore.
InterPro; IPR001682; Ca/Na_pore.
InterPro; IPR00582; IOn_trans.
InterPro; IPR000048; IO_region.
InterPro; IPR000048; IO_region.
InterPro; IPR000048; IO_region.
InterPro; IPR0001696; Na_channel_nlg.
InterPro; IPR001696; Na_channel_nlg.
InterPro; IPR016520; M-channel_nlg.
InterPro; IPR016520; Na_trans_assoc.
Pfam; PF00520; Ion_trans; 4.
Pfam; PF00512; Na_trans_assoc; 1.
Pfam; PF00512; Na_trans_assoc; 1.
                                                                                                                                                                                            CINI HUMAN STANDARD; PKI; 2000...

P35498; Q16172; Q96LA3; Q9C008;

01-JUN-1994 (Rel. 29, Created)

16-OCT-2001 (Rel. 40, Last sequence update)

05-JUL-2004 (Rel. 44, Last annotation update)

Sodium channel protein type I alpha subunit (Voltage-gated sodium channel alpha subunit NavI.1) (Sodium channel protein, brain I alpha...
                                                                                             Homo sapiens (Human)
Eukaryota; Metazoa; (
Mammalia; Eutheria; I
NCBI_TaxID=9606;
                       SEQUENCE
HIS-1648.
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MEDLINE=20206553;
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Transport; Voltage-gated channel.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cynops.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hirota K., Kaneko Y.,
Submitted (JAN-1999) t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence up
01-MAR-2004 (TrEMBLrel. 26, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=Retina;
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SUBCELLULAR LOCATION: Integral membrane protein (
SIMILARITY: Belongs to the sodium channel family,
L; AF123593; AAD17315.1; -
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SM00015; IQ; 1.
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                                               FROM N.A.
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PubMed=10742094
                                          (ISOFORM 1), AND
                                                                                                                  Chordata; Craniata; Vertebrata; Primates; Catarrhini; Hominidae
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EMBL/GenBank/DDBJ databases
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                                             VARIANTS
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VARIANT GEFS+2 THR-1270.

WEDLING=21630138; Pubmed=11756608;
Abou-Khalil B., Ge Q., Desai R., Ryther R., Baz-Haines J.L., Sutcliffe J.S., George A.L. Jr.;

"Partial and generalized epilepsy with febrile
                                                                                                                                               "De novo mutations in the sodium-channel myoclonic epilepsy of infancy."; Am. J. Hum. Genet. 68:1327-1332(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VARIANTS GEFS+2 VAL-188; LEU-1353 AND MET-1656.

MEDLINE=21152794; PubMed=11254444;

Wallace R.H., Scheffer I.E., Barnett S., Richards M., Dibbens L.,

Desai R.R., Lerman-Sagie T., Lev D., Mazarib A., Brand N.,

Ben-Zeev B., Goikhman I., Singh R., Kremmidiotis G., Gardner A.,

Sutherland G.R., George A.L. Jr., Mulley J.C., Berkovic S.F.;

"Neuronal sodium-channel alphal-subunit mutations in generalized epilepsy with febrile setzures plus.";

Am. J. Hum. Genet. 68:859-865(2001).
                                                                                                                                                                                                                      De Jonghe P.;
                                                                                                                                                                                                                                    Claes L.,
                                                                                                                                                                                                                                                         VARIANT SMEI PHE-986.
MEDLINE=21257503; PubMed=11359211;
                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=21152275; Pul
Escayg A., Heils A.,
"A novel SCN1A mutat:
                                                                                                                                                                                                                                                                                                                                                                     febrile seizures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 1335-1428 FROM N.A. MEDIJNS=94340991; PubMed=8062593; Malo M.S., Blanchard B.J., Andresen Li X., Jabs E.W., Korenberg J.R., II "Localization of a putative human by became the second of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            chromosome
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Escayg A., MacDonald B.T., Meisler M.H., An-Gourfinkel I., Brice A., LeGuern E., Neuresi C., Malafosse A., encoding a neuronal "Mutations of SCNIA, encoding a neuronal families with GEFS+2.";
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Sugawara T.,
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                                                                                                                                                                                                                                                                                                                                                                   21152275; PubMed=11254445;
Heils A., MacDonald B.T., Haug K., Sander T., Meisler M.H.;
SCNIA mutation associated with generalized epilepsy with
seizures plus -- and prevalence of variants in patients with
                                                                                                                                                                                                                                    Del-Favero J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (OCT-2002) to
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Cell Genet. 67:178-186(1994).
mutation.",
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neuronal vo
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Goto J., Kanazawa I.;
cDNA for human voltage-gated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rado T.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed=1317301;
                                                                                                                                                                                                                                                                                                                            68:866-873 (2001).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      M., Yamakawa K.;
voltage-gated sodium channel type I
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В.
                                                                                                                                                                                                                                  Lagae L., Van Broeckhoven
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             seizures plus and
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HSSP;

Genew; HGh\
MIM; 182389; -.

R MIM; 604233; -.

OR MIM; 607208; -.

OR GO; GO:0016021; C:integral

DR GO; GO:0005248; F:voltage-gate_

GO; GO:0006814; P:sodium ion transport

InterPro; IPR001682; Ca/Na_pore.

InterPro; IPR005821; Ion_trans_

InterPro; IPR005821; Ion_trans_

"ToterPro; IPR001682; M-Channel nlg.

"ToterPro; IPR001682; Na_channel.

"Pro; IPR001685; Na_channel.

"Pro; IPR010526; Na_trans_assoc.

""1; IOn_trans; 4.
                                                                                                           EMBL; AF225985; AAK00217.1; -.
EMBL; AV043484; AAK95360.1; -.
EMBL; AB093548; BAC21101.1; -.
EMBL; AB093549; BAC21102.1; -.
EMBL; S71446; AAB31605.1; -.
EMBL; X65362; CAA46439.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            with febrile seizures plus type 2 (GEF8+2) [MIM:604233]. This autosomal dominant disorder is characterized by febrile seizures in children and afebrile seizures in adults. Penetrance is incomplete and a large intrafamilial variability of the phenotype is observed.

-I- DISEASE: Defects in SCN1A are a cause of severe myoclonic epilepsy in infancy (SMEI) [MIM:607208], a severe form of generalized epilepsy with febrile seizures. SMEI is a rare disorder characterized by normal development before onset, seizures beginning in the first year of life in the form of generalized or unilateral febrile clonic seizures, secondary appearance of myoclonic seizures, and occasionally partial seizures. It is associated with ataxia, slowed psychomotor development, and mental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Neurology 57:2265-2272(2001).
-!- FUNCTION: Mediates the voltage-dependent sodium
                                                                                                                                                                                                                                                                                                            GO:0016021; C:integral to membrane; NAS. GO:0005248; F:voltage-gated sodium channel GO:0006814; P:sodium ion transport; NAS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY: Belongs to the sodium channel family. SIMILARITY: Contains 1 IQ domain.
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ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Isoid=P35498-2; Sequence=VSP_001031;
Note=No experimental confirmation available;
Note=No experimental confirmation available;
DOMAIN: The sequence contains 4 internal repeats, each with 5
hydrophobic segments (S1,S2,S3,S5,S6) and one positively charged
segment (S4). Segments S4 are probably the voltage-sensors and as
characterized by a series of positively charged amino acids at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        every third position.
DISEASE: Defects in SCN1A are the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation -
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                                                                                                                                                                                                                                                                                                                                        activity;
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                                                                                                                                                                                                                                                                                                                                                                                                       13-AUG-1987 (Rel. 05, Created)
13-AUG-1987 (Rel. 05, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
Sodium channel protein type I alpha subunit (
channel alpha subunit Navl.1) (Sodium channel
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SEQUENCE FROM N.A. MEDLINE=87311395; Noda M., Numa S.;
                                                                                            MEDLINE=86146901; PubMed=3
Noda M., Ikeda T., Kayano
Takahashi H., Numa S.;
"Existence of distinct sod
Nature 320:188-192(1986).
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Alternative splicing; Disease mutation; Epilepsy; Glycoprotein;
Ion transport; Ionic channel; Multigene family; Polymorphism; Repeat;
Sodium channel; Transmembrane; Voltage-gated channel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00612; IQ; 1.
Pfam; PF00511; Na trans asso
PRINTS; PR00170; NACHANNEL.
PRINTS; PR01664; NACHANNELI.
PROSITE; PS50096; IQ; FALSE_
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larity 100.0%;
Conservative
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Da; Chordata;
la; Rodentia;
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                           PubMed=2442385
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Pred. No. 5.5
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Sciurognathi; Muridae;
                                                                                                                          channel
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5.5e-19;
                                                                                                                                                                     Takeshima H.,
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el protein, brain I al)
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; Murinae; Rat
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                                                                                                                                                                                                                                                                                                                                                                                                                 brain I alpha
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PÉAM; PF00520; Ion trans; 4.

PÉAM; PF00512; IQ; 1.

PÉAM; PF006512; NA trans assoc; 1.

PRINTS; PR00170; NACHANNELL.

PRINTS; PR01664; NACHANNELL.

PROSITE; PS50096; IQ; FALSE NEG.

Glycoprotein; Ion transport; Ionic
                                                                                                                                                                                                                                                                                                                                                              InterPro; IPRO01682; Ca/Na pore.
InterPro; IPRO02111; Cat channel TrpL.
InterPro; IPRO02821; Ion trans.
InterPro; IPRO05822; Ion trans.
InterPro; IPRO05820; M-channel nlg.
InterPro; IPRO01696; Na channel.
InterPro; IPRO01696; Na channel.
InterPro; IPRO01696; Na channel.
InterPro; IPRO01696; Na channel.
InterPro; IPRO1696; Na channel.
InterPro; IPRO1696; Na trans assoc.
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  Glycoprotein; To-
Sodium Channel;
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REPEAT 175
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REPEAT 150
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              RGD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; X03638; CAA27286.1; -. EMBL; M22253; AAA79965.1; -. POR; A25019; A25019. HSSP; P04775; 1BYY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   J. Recept. Res. 7:467-497(1987).

-!- FUNCTION: Mediates the voltage-dependent sodium ion permeability of excitable membranes. Assuming opened or closed conformations in response to the voltage difference across the membrane, the may pass in accordance with their electrochemical gradient.

-!- SUBCRIT: The sodium channel consists of a large polypeptide and 2-
-!- SUBCRITI and channel consists of a large polypeptide.

-!- SUBCRITI The sequence represents a large polypeptide.
-!- DOMAIN: The sequence contains 4 internal repeats, each with 5 segment ($1,$2,$3,$5,$6) and one positively charged characterized by a series of positively charged amino acids at every third position exists of positively charged amino acids at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         every third position.
-!- SIMILARITY: Belongs to the sodium channel family.
-!- SIMILARITY: Contains 1 IQ domain.
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J. Recept. Res. 7:467-497(1987).
-!- FUNCTION: Mediates the voltage-dependent
                                                                                                                                                                                                                                                                                                                                                                                                                                                             69364;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scn1a
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  Ionic channel; Multigene family; Repeat; e; Voltage-gated channel.
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                                                                                                                                                                                                                                                                                                                              Lopreato GF., Lu Y., Southwell A., Atkinson N.S., Wilcox T.P., Zakon H.H.;
"Evolution and divergence of sodium channel genes Proc. Natl. Acad. Sci. U.S.A. 98:7588-7592 (2001).
EMBL, AF378139, AAKS5437.1;
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:0005812; P:cation transport; IEA.
GO; GO:0006812; P:cation transport; IEA.
                                                                                                                                                                                                                                          InterPro; IPR001682; Ca/Na pore.
InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR005821; Ion trans.
InterPro; IPR005820; M+channel nlg.
InterPro; IPR005820; M+channel assoc.
                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sternopygus macrurus. Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Gymnotiformes; Sternopygidae; Sternopygus. NCBI_TaxID=77841;
                                                                                                                                                                                                                            Pfam;
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01-DEC-2001 (TrEMBLrel. 19, 1
01-MAR-2004 (TrEMBLrel. 26, )
Sodium channel 1 (Fragment).
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PF06512; Na_trans_assoc; 1.
ransport; Ionic channel; Transmembrane; Transport.
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                          4 YFVIFIIFGSFFTLNLFIGVIIDNF 28
                                                                                           Similarity
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                                                                                                                                                AΑ;
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                                                                                                                                         718
81545 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           PubMed=11416226;
Y...Southwell A., Atkinson N.S., Hillis D.M.,
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Pred. No. 5.5
0; Mismatches
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S6 of re
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                                                                                                          DB 2;
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Lopreato G.F., Lu Y., Southwell A., Atkinson N.S., Hillis Audicox T.P., Zakon H.H.;

Milcox T.P., Zakon H.H.;

"Evolution and divergence of sodium channel genes in verte Proc. Natl. Acad. Sci. U.S.A. 98:7588-7592(2001).

REMBL; AF378143; AAK55441.1; -.

RGO; GO:0016021; C:integral to membrane; IEA.

RGO; GO:0005261; F:cation channel activity; IEA.

RGO; GO:0006812; P:cation transport; IEA.

RGO; GO:0006812; P:cation transport; IEA.

RGO; GO:0006812; P:cation transport; IEA.

R InterPro; IPR001682; Ca/Na_pore.

R InterPro; IPR005820; Ion_trans.

R InterPro; IPR005820; M+channel nlg.

InterPro; IPR005820; M+channel nlg.

InterPro; IPR010526; Na_trans_assoc.

R Pfam; PF00520; Ion_trans; 2.

R Pfam; PF00520; Ion_trans; 2.

R Pfam; PF00520; Ion_trans_assoc; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ion transport; 1
NON_TER 1
NON_TER 743
SEQUENCE 743
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                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
TISSUE-Skeletal muscle;
MEDLINE-20090650; PubMed=10623632;
Yotsu-Yamashita M., Nishimori K., 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q90Z26
Q90Z26;
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01-DEC-2001 (TrEMBLrel. 19,
01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Voltage-gated sodium channel.
Takifugu pardalis (Panther puffer).
                                                             "Binding properties of 3H-PbTx-3 and 3H-saxitoxin to brain membranes and to skeletal muscle membranes of puffer fish Fugu pardalis, and the primary structure of a voltage-gate (Mat channel alpha-subunit (fMMal) from skeletal muscle of F. pardalis." I see the skeletal muscle of F. pardalis."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-OCT-2000
01-OCT-2000
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                                  Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=98921;
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                                                                                                                                                                                                                                  Yasumoto
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SUBCELLULAR LOCATION: Integral membrane protein
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(TrembLrel. 15, Last sequence update)
(TrembLrel. 26, Last annotation update)
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Last annotation update)
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2.3e-16;
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                                                                                                                                                                                                                                                            Sugimoto A.,
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RESULT 22

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AC Q9DF5

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AC Q9
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                Interpro; IPR001682; Ca/Na pore.
Interpro; IPR002111; Cat_channel_TrpL.
Interpro; IPR002821; Ion_trans.
Interpro; IPR005821; Ion_trans.
Interpro; IPR0005820; M+Channel nlg.
Interpro; IPR001696; Na_channel.
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InterPro; IPR002111; Cat channel_TrpL.
InterPro; IPR005821; Ion trans.
InterPro; IPR005829; M+channel nlg.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_trans_assoc.
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Q1-MAR-2001 (TrEMBLrel. 16,

Q1-MAR-2001 (TrEMBLrel. 26,

Q1-MAR-2004 (TrEMBLrel. 26,

Q1-MAR-2004 (TremBlrel. 26,
    InterPro;
Pfam; PFO
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
NCBI_TaxID=7955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -I- SIMILARITY: Belongs to the sodium channel fi

RMBL; AB030482; BAA90398.1; -.

HSSP; P04775; IBYY.

G0; G0:0016021; C:integral to membrane; IEA.

G0; G0:0001518; C:voltage-gated sodium channel of the control of the channel of th
                                                                                                                                                                                                                                                                                                                                            ZFIN; ZDB-GENE-000828-1; scn8a. GC; GC:0016021; C:integral to membrane; IEA. GC; GC:001518; C:integral to membrane; IEA. GC; GC:0001518; C:voltage-gated sodium channel GC; GC:0005261; F:cation channel activity; IEA. GC; GC:0005248; F:voltage-gated sodium channel GC; GC:0006812; F:cation transport; IEA. GC; GC:0006814; P:sodium ion transport; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00520; Ion trans; 4. Pfam; PF00612; IQ; I. Pfam; PF06512; Na trans assoc; PRINTS; PR00170; NACHANNEL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AF297658; AAG18440.1; -.

    -I- SUBCELLULAR LOCATION: Integral membrane protein (By similarity).
    -I- SIMILARITY: Belongs to the sodium channel family.

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tsai C.-W., Tseng J.-J., Horng J.-F., Wu J.-L., Tsay H. Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-oregon;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Name=scn8a;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sodium channel protein Scn8a.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9DF53
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Ion transport; Ionic channel; Sodium channel; Transmembrane;
Transport; Voltage-gated channel.

SEQUENCE 1880 AA; 212084 MW; 406483C6C3D43E02 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P04775; 1BYY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 YFVIFIIFGSFFTLNLFIGVIIDNF 28
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25; Conserv
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llarity 100.0%;
Conservative
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Last sequence update)
Last annotation updat
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                                                                                                                                                                                                                                                                                                                                                                                                                                activity; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complex;
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RESULT 24
BAD12085
ID BAD1:
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Best Local (
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Best Local S
Matches 25
             BAD12085
                                                                                                                                                                                                                                                                                                                                Pfam; PF00520; Ion trans; 4.
Pfam; PF00612; IO; 1.
Pfam; PF06512; Na trans assoc; 1.
PRINTS; PR00170; NACHANNEL.
PRINTS; PR01666; NACHANNEL5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ou S., Kameyama A., Kameyama M.;
Submitted (JAN-2004) to the EMBL/GenBank/DDBJ databases.
-I- SUBCELLULAR LOCATION: Integral membrane protein (By
-I- SIMILARITY: Belongs to the sodium channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (Human).
Bukaryota, Metazoa; Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted
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Pfam; PF06512; Na trans assoc; 1.
PRINTS; PR00170; NACHANNEL.
PRINTS; PR01607; NACHANNELB.
SMART; SM00015; IQ; 1.
Ion transport; Ionic channel; Sodium channel; Transmembrane;
Transport; Voltage-gated channel.
SEQUENCE 1949 AA; 221760 MW; 6BCA69664BDC7BC3 CRC64;
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Q75RX9;
                                                                                                                                                                                                                 Local
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                                                                                                               1395
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                                                                                                    YFVIFIIFGSFFTLNLFIGVIIDNF 1419
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                                                                                                                                                                                                                                                                         ort; Ionic channel; Sodium channel; Transmembrane; Voltage-gated channel.
1962 AA; 221146 MW; TRADEDFRAGE.
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      PRELIMINARY;
                                                                                                                                                                                      89.3%; Score 25; llarity 100.0%; Pred. No. Conservative 0; Mismatci
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kameyama M.;
) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
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l splicing variant.
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5e-16;
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                                                                                                                                                                                                                        Length 1962;
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RESULT RESULT OF ACT OF
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HSSP; P04775; 1BYY

GO; GO:0001518; C:voltage-gated g GO; GO:0005248; F:voltage-gated g GO; GO:0006812; P:cation channel GO; GO:0006812; P:cation transport GO; GO:000681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 25
                                                                                                       InterPro;
InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=95271284; Furnity Schaller K.L., Krzemien D.M., Yarowsky P.J., Figure Schaller K.L., Krzemien D.M., Yarowsky P.J., Figure Schaller K.L., Krzemien D.M., Yarowsky P.J., Figure Schaller K.L., Krzemien D.M., Parowski J. Neurosci 15:3231-3242 (1995).

-I- SUBCELLULAR LOCATION: Integral membrane protein (By similarity).
                                                                                 InterPro,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q63541
Q63541;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=Sprague-Dawley; TISSUE-Brain; MEDLINE=95271284; PubMed=7751906;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1996 (TrEMBLrel.
01-NOV-1996 (TrEMBLrel.
01-MAR-2004 (TrEMBLrel.
Sodium_channel protein 6
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03-MAR-2004 (TrEMBLrel. 2
03-MAR-2004 (TrEMBLrel. 2
03-MAR-2004 (TrEMBLrel. 2
TTX-resistant sodium chan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ou S., Kan
"Splicing
Submitted
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
Ou S., Kameyama A., Kameyama M.;
"Cloning of TTX-resistant Na+ Channels in NB-1 cell lines.";
Submitted (JAN-2004) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         wukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
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Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                           E; P04775; 1BYY.

GO:0016021; C:integral to membrane; IEA.
GO:0001518; C:voltage-gated sodium channel complex;
GO:0005261; F:cation channel activity; IEA.
GO:0005248; F:voltage-gated sodium channel activity;
GO:0006812; P:cation transport; IEA.
GO:0006814; P:sodium ion transport; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1395
o; IPRO01682; Ca/Na pore.
o; IPR002111; Cat channel TrpL.
o; IPR00183; Decarbxylse2.
o; IPR005821; Ion_trans.
o; IPR005821; Ion_trans.
o; IPR005820; M-channel nlg.
o; IPR001696; Na_channel.
o; IPR008054; Na_channel8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kameyama A., Karing Variant of Ted (JAN-2004) t
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YFVIFIIFGSFFTLNLFIGVIIDNF 1419
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
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Rodentia;
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f TTX-resistant Na+ channel

to the EMBL/GenBank/DDBJ c
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DR PROSITE; PS0096; IQ; 1.
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SQ SEQUENCE 1976 AA; 225227 MW; B6949327A47FA88A CRC64;
Query Match
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Matches 25; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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 8 4, Applia 15, Applia 16, Applia 23, Applia 23, Applia 23, Applia 23, Applia 23, Applia 24, Applia 24, Applia 24, Applia 26, Applia 26, Applia 27, Applia 28, Applia
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; ORGANISM: Homo sapiens US-10-162-012-24
                                                                                                               Query Match
Best Local S
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PRIOR APPLICATION NUMBER: US 09/875,423
PRIOR APPLICATION NUMBER: US 09/875,423
PRIOR APPLICATION NUMBER: PCT/US01/18398
PRIOR APPLICATION NUMBER: US 60/209,238
PRIOR PILING DATE: 2001-06-05
PRIOR PILING DATE: 2000-06-05
PRIOR PILING DATE: 2001-06-05
PRIOR PILING DATE: 2001-06-05
PRIOR APPLICATION NUMBER: US 09/875,363
PRIOR PILING DATE: 2001-06-05
PRIOR PILING DATE: 2001-06-05
PRIOR PILING DATE: 2001-06-05
PRIOR PILING DATE: 2001-06-05
PRIOR APPLICATION NUMBER: US 60/227,068
PRIOR PILING DATE: 2000-08-22
PRIOR APPLICATION NUMBER: US 09/928,530
PRIOR APPLICATION NUMBER: US 09/928,530
PRIOR PILING DATE: 2001-08-13
PRIOR PILING DATE: 2001-08-13
PRIOR APPLICATION NUMBER: US 09/928,530
PRIOR PILING DATE: 2001-08-13
                                                                                                                                                                                                                                           SOFTWARE: FastSEQ
SEQ ID NO 24
LENGTH: 1836
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                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: US (not assigned) PRIOR FILING DATE: 2002-05-13
                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: US 60/209,845
PRIOR FILING DATE: 2000-06-06
PRIOR APPLICATION NUMBER: US 09/875,321
PRIOR FILING DATE: 2001-06-06
PRIOR APPLICATION NUMBER: PCT/US01/18340
PRIOR FILING DATE: 2001-06-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILE REFERENCE: 10448-190001
CURRENT APPLICATION NUMBER: US/10/162,012
CURRENT FILING DATE: 2002-06-04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Curtis, Rory A.J.
APPLICANT: Silos-Santiago, Inmaculada
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TITLE OF INVENTION: NOVEL HUMAN ION CHANNEL AND TRANSPORTER FAMILY MEMBERS
1271 MYLYFVÍFÍÍFGSFFTLNLFIGVIÍÐNF 1298
                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: 2002-03-28
APPLICATION NUMBER: US 60/290,288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: PCT/US01/25475
FILING DATE: 2001-08-15
APPLICATION NUMBER: US 60/226,770
FILING DATE: 2000-08-21
                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 2001-05-11
                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: PCT/US02/09728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US 60/279,281
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: PCT/US01/26096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US 09/934,421
                           1 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 28
                                                                                                               Similarity
                                                                                 100.0%; Score 28; DB 4; ilarity 100.0%; Pred. No. 1.6e-20; Conservative 0; Mismatches 0;
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                                                                                                                           Length 1836;
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                                                                                   Gaps
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                                                                                             US-09-457-571-7
                         Sequence 7, Application Patent No. 6703486
GENERAL INFORMATION:
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Best Local S
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RESULT 2
US-08-836-325-7
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/836,325
FILING DATE: 2-MAY-1997
CLASSIFICATION LOTA:
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
APPLICANT: Mandel, Gail
APPLICANT: Halegoua, Simon
TITLE OF INVENTION: Peripheral Nervous System Specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER. ^^/-
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NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: PCT/1
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
TITLE OF INVENTION: Thereof
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: STERNE, KESSLER, STREET: 1100 New York Ave.,
                                                                                                                                                                                                                                    1449 MYLYFVIFIIFGSFFTLNLFIGVIIDNF 1476
                                                                                                          7, Application US/09457571
5. 6703486
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   peptide
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                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 28; DB 3; 100.0%; Pred. No. 1.7e-20;
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                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 202-371-2540 INFORMATION FOR SEQ ID NO: 7:
                                                     APPLICANT: Halegoua, APPLICANT: Borden, ITITLE OF INVENTION: TITLE OF INVENTION: TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: 08/836
FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
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TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/3:
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER,
STREET: 1100 New York Ave.,
                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                    TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: (FILING DATE: 09-DEC-1
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
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CTTY: Washington
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                                                                                                                                  Halegoua, Simon
Borden, Laurence A.
                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
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ADDRESS
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100.0%; Pr
arive 0;
                                                     Peripheral Nervous System Specific Sodium Channels, DNA Encoding Therefor, Crystallization, Sodium Channels, DNA Encoding Therefor, Crystallizational X-ray Diffraction, Computer Molecular Modeling, Rational Drug Design, Drug Screening, and Methods of Making and U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sodium Channels, DNA Encoding Therefor, Crystallization, X-ray Diffraction, Computer Molecular Modeling, Rational Drug Design, Drug Screening, and Methods of Making and Using
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Pred. No. 1.7e-20;
; Mismatches 0;
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N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2005;
                                                       Molecular Modeling, Rational and Methods of Making and Using
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                                                                                                                                                                                                                                                                                                                                                                Patent No.
                                                                                                                                                                                                                                                                                                                                                                               Sequence 8,
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                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                   APPLICANT: Mandel, Gai
APPLICANT: Halegoua, S
TITLE OF INVENTION: PC
TITLE OF INVENTION: SC
TITLE OF INVENTION: X-
TITLE OF INVENTION: TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/14251
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: 08/482,401
                              ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                         CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER,
STREET: 1100 New York Ave.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 08/4
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/836,325 FILING DATE: 2-MAY-1997 CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC comparible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 08/3
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: 202-371-2600
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COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Ludwig, Steven R. REGISTRATION NUMBER: 36,203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
STREET: 1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
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                                                                                                                        Washington
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                                                                                          USA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               89.3%;
                                                                                                                                                                                                                                  Peripheral Nervous System Specific Sodium Channels, DNA Encoding Therefor, Crystallization, Sodium Channels, DNA Encoding Therefor, Crystallization, X-ray Diffraction, Computer Molecular Modeling, Rational Drug Design, Drug Screening, and Methods of Making and Using
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                                                                                                                                                                                                                                                                                                             Simon
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Pred. No.
                                                                                                                                           GOLDSTEIN & FOX P.L.L.C
N. W., Suite 600
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ZIP: 2005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/836,325
FILING DATE: 2-MAY-1997
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; MOLECULE TYPE: peptide US-09-457-571-8
                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Mandel, Gail
APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral |
TITLE OF INVENTION: Sodium Chant
TITLE OF INVENTION: X-ray Diffra
TITLE OF INVENTION: Drug Design,
TITLE OF INVENTION: Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 89.3%; Score 25; DB 4; L
Best Local Similarity 100.0%; Pred. No. 8.9e-18;
Matches 25; Conservative 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334,029
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                      STREET: 1100 New CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Ludwig, Steven R. REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09.
TELECOMMUNICATION INFORMATION: 202-371-2600
                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/8:
FILING DATE: 02-MAY-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/457,571 FILING DATE: 09-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS:
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TYPE: amino acid
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6110672
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1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                       USA
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US-09-457-571-2
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                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,325
FILING DATE: 02-MAX-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/14251
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA: 08/482,401
FILING DATE: 07-UN-1995
PRIOR APPLICATION NUMBER: 08/482,401
FILING DATE: 07-UN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPE: protein US-08-836-325-2
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GENERAL INFORMATION:
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Best Local Similarity
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334,029
FILING DATE: 02-NOV-1994
                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA;
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APPLICANT: Halegona,
TITLE OF INVENTION:
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SEQUENCE CHARACTERISTICS:
LENGTH: 1011 amino acids
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CITY: Washington
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                                                                                                                                                                                                                                         APPLICATION NUMBER:
FILING DATE: 09-DEC
CLASSIFICATION: 51
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ZIP: 20005-3934
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ATTORNEY/AGENT INFORMATION:
NAME: Ludwig, Steven R
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/3
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FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/41
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6703486
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1100 New York Ave., N. W., Suite 600
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WENTION: Peripheral Nervous System Specific

WENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,

WENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,

WENTION: X-ray Diffraction, Computer Molecular Modeling, Rational

NVENTION: Drug Design, Drug Screening, and Methods of Making and Using
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                                                                                                                                                                                                                                                                      US/09/457,571
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. 1.1e-17;
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US-08-836-325-2

Sequence 2 Patent No.

COUNTRY:

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ATTORNEY/AGENT INFORMATION:

Ludwig, Steven

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 Query Match
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                                                                                                                                                                                                                           CLASSIFICATION: 536

PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/039,447

FILING DATE: 26-FEB-1997

ATTORNEY/AGENT INFORMATION:
AMME: CLARK, JANET P.

REGISTRATION NUMBER: 34,799

REFERENCE/DOCKET NUMBER: R0020B-REG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: U.S.A.
ZIP: 94304-1397
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
                                                                                                                                                       TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 852-3097
TELEPAX: (650) 855-3322
INFORMATION FOR SEQ ID NO: 9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 1976 amino acids
                                                                                                                                                                                                                                                                                                                                                           SUFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/024,020B FILING DATE: 16-FEB-1998
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CORRESPONDENCE ADDRESS:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371_2600
                                                   TOPOLOGY: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
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CITY: PALO ALTO
                                                                                  STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
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3401 HILLVIEW AVENUE, MS A2-250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SANGAMESWARAN, LAKSHMI
VENTION: NOVEL CLONED TETRODOTOXIN-SENSITIVE
VENTION: SODIUM CHANNEL I-SUBUNIT AND A SPLICE VARIANT THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HERMAN, RONALD C.
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                                                   peptide
                                                                                    single
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100.0%; Pred. No. 1.1e-17
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 89.3%;
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 Score 25;
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 DB 3;
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Length 1976;
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RESULT 10 US-09-024-020B-3

Sequence 3, Application US/09024020B Patent No. 6030810 GENERAL INFORMATION:

DELGADO, STEPHEN G.

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                                                                          Matches
                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 100.0%; Pred. No. 1.9e-17; Matches 25; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 9, Application US/09425043 Patent No. 6335172
                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: 9: SEQUENCE CHARACTERISTICS: LENGTH: 1976 amino acids
                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US 60/039
FILING DATE: 26-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: CLARK, JANET P.
REGISTRATION NUMBER: 34,799
REFERENCE/DOCKET NUMBER: R002
TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 852-3097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: SANGAMESWARAN, LAKSHMI TITLE OF INVENTION: NOVEL CLONED TITLE OF INVENTION: SODIUM CHANNE
                                                                                                                                                               MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: DIETRICH, PAUL
APPLICANT: FISH, LINDA M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: HERMAN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                       TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/09/425,043 FILING DATE: CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: U.S.A. ZIP: 94304-1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 3401 HII
CITY: PALO ALTO
STATE: CA
                                                                                                                                                                                    TOPOLOGY:
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1439 YEVIFIIFGSEFTLNLFIGVIIDNF 1463
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                                                                          25;
                                      4 YFVIFIIFGSFFTLNLFIGVIIDNF 28
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                                                                        Conservative
                                                                                                                                                                                                                                                                                               (650) 855-5322
                                                                                                                                                                                  linear
                                                                                                                                                                                                    single
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                                                                                           100.0%;
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                                                                                           Score 25; DB 3; Pred. No. 1.9e-
                                                                                                                                                                                                                                                                                                                                                      R0020B-REG
                                                                          Mismatches
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                                                                                             1.9e-17
                                                                                                          Length 1976;
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RESULT 11
US-09-425-043-3
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                                                                                                                                                                                                                                                                                                                                                                         sequence 3, Application US/09425043
Patent_No. 6335172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
STATE: CA
COUNTRY: U.S.A.
COUNTRY: 2019:
ZIP: 94304-1397
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (650) 855-5322
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                  APPLICANT: HERMAN, RONALD C.
APPLICANT: SANGAMESWARAN, LAKSHMI
TITLE OF INVENTION: NOVEL CLONED TETRODOTOXIN-SENSITIVE
TITLE OF INVENTION: SODIUM CHANNEL I-SUBUNIT AND A SPLICE VARIANT THEREOF
                                                                                                                                                                  NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS: single TOPOLOGY: linear MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: CLARK, JANET P.
REGISTRATION NUMBER: 34,799
REFERENCE/DOCKET NUMBER: ROI
TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 852-2097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOTTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/024,020B
FILING DATE: 16-FEB-1998
FILING DATE: 16-FEB-1998
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APPLICATION NUMBER: US 60/039,447
FILING DATE: 26-FEB-1997
ATTORNEY/AGENT INFORMATION:
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ADDRESSES: JANET PAULINE CLARK
STREET: 3401 HILLVIEW AVENUE, MS A2-250
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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TITLE OF INVENTION: NOVEL CLONED TETRODOTOXIN-SENSITIVE
TITLE OF INVENTION: SOLIUM CHANNEL I-SUBUNIT AND A SPLICE VARIANT THEREOF
                                                                                                  STREET: 3401 HIL
CITY: PALO ALTO
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                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 1978 amino acids
TYPE: amino acid
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                                                                                                                         3401 HILLVIEW AVENUE, MS A2-250
                                                                                                                                                                                                                                                                                            FISH, LINDA M.
                                                                                                                                                                                                                                                                                                           DELGADO, STEPHEN G.
DIETRICH, PAUL S.
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                                                                                                                                               JANET PAULINE CLARK
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N, RONALD C.
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                                                    CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/
APPLICATION NUMBER: US/08/
FILING DATE: 2-MAY-1997
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION UNMBER: PCT/US
FILING DATE: 02-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 09/024,020
FILING DATE: 16-FEB-1998
APPLICATION NUMBER: US 60/039,447
FILING DATE: 26-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: CLARK, JANET P.
REFERENCE/DOCKET NUMBER: 34,799
REFERENCE/DOCKET NUMBER: R0020B-REG
TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 852-3097
TELEPHONE: (650) 855-5322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: (650) 855-5322 INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                  COUNTRY: USA
ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral
TITLE OF INVENTION: Sodium Char
TITLE OF INVENTION: X-ray Diff.
                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
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LENGTH: 1978 amino aci
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                                                                                                                                                                                                                                                                                                                                STATE:
                                                                                                                                                                                                                                                                                                                                                                      STREET:
                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
STREET: 1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
TOPOLOGY: lir
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                              Washington
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Sodium Channels, DNA Encoding Therefor, Crystallization,
X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and Using
                                                                          PCT/US95/14251
                                                                                                                                                 US/08/836,325
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; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-836-325-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-457-571-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 13
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                     APPLICATION NUMBER: US/09/457,571
FILING DATE: 09-DEC-1999
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,325
FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/14251
APPLICATION NUMBER: PCT/US95/14251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                       FILING DATE: 02-NOV-1995
PRIOR APPLICATION UNDER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION UNBER: 08/334,029
APPLICATION NUMBER: 08/334,029
                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/3
FILING DATE: 02-NOV-1994
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                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-2600
                                                   FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Washington STATE: DC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Ludwig, Stever REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER:
           NAME: Ludwig, Steven R. REGISTRATION NUMBER: 36,203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1434 YFVIFIIFGSFFTLNLFIGVIIDNF 1458
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1984 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mandel, Gail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NFORM ... Steven R. 36,203
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100.0%; Pr
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Pred. No.
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0917.0240003
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/09/024,020B
FILING DATE: 16-FEB-1998
CLASSIFICATION: 536
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                                                                                                         Matches
                                                                                                                                         Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 60/039,447

PILING DATE: 26-PEB-1997

ATTORNEY/AGENT INFORMATION:

NAME: CLARK, JANET P.

REGISTRATION NUMBER: 34,799

REFERENCE/DOCKET NUMBER: R0020B-REG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (650) 855-5322 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: HERMAN, RONALD C.

APPLICANT: SANGAMESWARAN, LAKSHMI
TITLE OF INVENTION: NOVEL CLONED TETRODOTOXIN-SENSITIVE
TITLE OF INVENTION: SODIUM CHANNEL I-SIBINATE NOVEL CHANNEL CHANNEL I-SIBINATE NOVEL CHANNEL I-SIBINATE NOVEL CHANNEL I-SIBINATE NOVEL CHANNEL I-SIBINA
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CORRESPONDENCE ADDRESS:
ADDRESSES: JANET PAULINE CLARK
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                                                                                                                                                                                                                                                                                                                                       TYPE: amino
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les 25; Conserv
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                                                                                                                                                                                                                                                                                                              TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 1984 amino acids
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YFVIFIIFGSFFTLNLFIGVIIDNF 28
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                                                                                                      89.3%; Score 25; DB 3; llarity 100.0%; Pred. No. 1.9e-Conservative 0; Mismatches
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                                                                                                                                                                                                                                                                                                              linear
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                                                                                                                                                                                                                                                                                                                                          single
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Pred. No. 1.9e-1
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1451 YFVIFIIFGSFFTLNLFIGVIIDNF 1475

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                                                                                                                                                                  Sequence 12, Appli
Patent No. 6110672
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ver
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/425,043
FILING DATE:
CLASSIFICATION DATA:
APPLICATION NUMBER: US 09/024,020
FILING DATE: 16-FEB-1998
APPLICATION NUMBER: US 60/039,447
FILING DATE: 26-FEB-1997
ATTORNEY/AGENT INFORMATION:
NAME: CLARK, JANET P.
REGISTRATION NUMBER: 34,799
PREPERENTE NOCKET NUMBER: R0020B-REG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4, Application US/09425043 Patent No. 6335172
                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (650) 855-5322
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: Mandel, Gail
APPLICANT: Halegoua, Simon
APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: DIETRICH, PAUL S.
APPLICANT: FISH, LINDA M.
APPLICANT: HERMAN, RONALD C.
APPLICANT: SANGAMESWARAN, LAKSHMI
TITLE OF INVENTION: NOVEL CLONED TETRODOTOXIN-SENSITIVE
TITLE OF INVENTION: SODIUM CHANNEL I-SUBUNIT AND A SPLICE VARIANT THERBOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: JANET PAULINE CLARK
STREST: 3401 HILLVIEW AVENUE, MS A2-250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: RO
TELECOMMUNICATION INFORMATION:
TELEPHONE: (650) 852-3097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                  Local
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                                                                                                                                                                                                                                                                                                  1451 YEVIFIIFGSFFTLNLFIGVIIDNF 1475
                                                                                                                                                                                                                                                                                                                                                                                           25;
                                                                                                                                                                                                                                                                                                                                                                                           Similarity 100.
25; Conservative
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94304-1397
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                                                                                                                                                                                         Application US/08836325
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                                                                                                                                                                                                                                                                                                                                                                                      89.3%; Score 25; DB 3;
100.0%; Pred. No. 1.9e-1
tive 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                           1.9e-17;
hes 0;
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US-09-457-571-12
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Best Local Similarity
                                                                                                                                                                                                                                                                                                           Patent No.
                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: 12:
                                                                                                                                                            APPLICANT: Mandel, Gail
APPLICANT: Halegoua, Simon
APPLICANT: Halegoua, Simon
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rationa
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: 08/482,401
FILING DATE: 07-JUN-195
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334,029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: PCT/
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/08/836,325
FILLING DATE: 2-MAX-1997
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/14251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 20005-3934

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: FORM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
TELEFAX: 202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                        TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
STRANDEDNESS: not rele
TOPOLOGY: not relevant
                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
                      COUNTRY:
                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                  1436 YFVIFIIFGSFFTLNLFIGVIIDNF 1460
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RY: USA
20005-3934
                                                      Washington
                                                                                                                                                                                                                                                                                                               2, Application US/09457571
6703486
                                      g
                                                                            E: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1989 amino acids
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                                                                                                                                                        Thereof
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1.9e-17;
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SOFTWARE: Patentin Rel

APPLICATION NUMBER:

US/09/457,571

Release #1.0, Version #1.30

MEDIUM TYPE: Flop COMPUTER: IBM PC OPERATING SYSTEM:

3: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS

COMPUTER READABLE FORM:

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                                                                            ; SEQ ID NO 4
; LENGTH: 2016
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-634-920-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-634-920-4
                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 4, Application US/09634920 Patent No. 6342357
       Query Match

Best Local Similarity 100.0%; Pred. No. 1.9

Matches 25; Conservative 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                    PRIOR APPLICATION NUMBER: 60/190,057
PRIOR FILING DATE: 2000-03-17
PRIOR APPLICATION NUMBER: 60/147,488
PRIOR FILING DATE: 199-08-09
NUMBER OF SEQ ID NOS: 4
                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/634,920
CURRENT FILING DATE: 2000-08-09
                                                                                                                                                                                                                                                                                                                     APPLICANT: Splawski, Igor
APPLICANT: Keating, Mark T.
TITLE OF INVENTION: ALTERATIONS IN THE LONG OT SYNDROME GENES KVLQT1 AND
TITLE OF INVENTION: SCN5A AND METHODS FOR DETECTING SAME
FILE REFERENCE: 2323-155
                                                                                                                                                                         SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                 ENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 08/482
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 08/836,325 FILING DATE: 02-MAY-1997 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 09-DEC-1
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: PCT/
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENGTH:
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                                                                                                                                                                       PatentIn Ver. 2.0
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100.0%; Pred. No. 1.9e-17;
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<u>,,</u>
                                        Length 2016;
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         Indels
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US-09-896-994-2
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WordPorfect 6.1
CURRENT APPLICATION DATA:
APPLICATION UNMBER: US/09/514,907A
FILING DATE: 08-Feb-2000
CLASSIFICATION: <UNknown>
ATTORNEY/AGENT INFORMATION:
NAME: Paul K. Legaard
REGISTRATION NUMBER: 38,534
REFERENCE/DOCKET NUMBER: MEDT-0029/P-3586
TELECOMMUNICATION INFORMATION:
TELEPAX: (215) 568-3439
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
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PATENT NO. 6567705
PATENT NO. 09514907A
PAT
                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/09896994
Patent No. 6665563
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
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                                                                                                                                                                                               APPLICANT: Ken Stokes
JOS e MOYISSELLE
TITLE OF INVENTION: SYSTEMS AND METHODS FOR ENHANGING CARDIAC
TITLE OF INVENTION: SIGNAL SENSING BY CARDIAC PACEMAKERS THROUGH GENETIC TREATME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESSE: Woodcock Washburn Kurtz Mackiewicz & No. 6567705ris LLP
STREET: One Liberty Place - 46th Floor
CORRESPONDENCE ADDRESS:
ADDRESSE: Woodcock Washburn Kurtz Mackiewicz and No. 6665563ris
STREET: One Liberty Place - 46th Floor
CITY: philadelphia
STATE: PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1449 YFVIFIIFGSFFTLNLFIGVIIDNF 1473
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COUNTRY: U.S.A.
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100.0%; Pred. No.
tive 0; Mismatcl
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ZIP: 19103 COMPUTER READABLE FORM:

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; SEQ ID NO 4
; LENGTH: 2016
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-840-125-4
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                                                                                                              Query Match
Best Local S
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FILING DATE: 02-Un1-2001
CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: 09/514,907
FILING DATE: <Unknown>
APPLICATION NUMBER: 09/514,907
FILING DATE: <Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: Paul K. Legaard
REGISTRATION NUMBER: 38,534
REFERENCE/DOCKET NUMBER: MEDT-0029/P-3586
TELECOMMUNICATION INFORMATION:
TELEPRONE: (215) 568-3100
TELEPRAX: (215) 568-3139
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 2016 amino acids
                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 100.0%, p.
Matches 25; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 4, Application US/09840125
Patent No. 6787309
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                   APPLICANT: Keating, Mark T.

TITLE OF INVENTION: ALTERATIONS IN THE LONG OT SYNDROME GENES KVLQT1 AND
TITLE OF INVENTION: SCN5A AND METHODS FOR DETECTING SAME
FILE REFERENCE: 2323-155
CURRENT APPLICATION NUMBER: US/09/840,125
CURRENT FILING DATE: 2001-04-24
PRIOR APPLICATION NUMBER: 09/634,920
PRIOR FILING DATE: 2000-08-09
PRIOR FILING DATE: 2000-08-09
PRIOR APPLICATION NUMBER: 60/147,488
PRIOR APPLICATION NUMBER: 60/147,488
PRIOR APPLICATION NUMBER: 60/147,488
PRIOR FILING DATE: 1999-08-09
NUMBER OF SEQ ID NOS: 4
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Splawski, Igor
APPLICANT: Keating, Mark
1449 YFVIFIIFGSFFTLNLFIGVIIDNF 1473
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CURRENT APPLICATION DATA:
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                                                                                                              Similarity
                                             YFVIFIIFGSFFTLNLFIGVIIDNF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: unknown
                                                                                           Conservative
                                                                                89.3%; Score 25; DB 4; L
100.0%; Pred. No. 1.9e-17;
tive 0; Mismatches 0;
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100.0%; Pred. No. 1.9e-1
tive 0; Mismatches
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                                                                                                                              Length 2016;
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RESULT 22

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US-07-998-289B-6
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Matches
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Patent No. 5858713; GENERAL INFORMATION:
                                                                                                                                                                                                    Sequence 6, Application US/07998289B Patent No. 6027876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Braman, Susan J.
REGISTRATION NUMBER: 34,103
REFERENCE/DOCKET NUMBER: 1960
TELEPHONE: 716-263-1636
TELEPHONE: 716-263-1636
TELEPARTION FOR SEQ ID NO: 25:
SEQUENCE CHARACTERISTICS:
LENGTH: 413 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                         APPLICANT: Black, Bruce C
APPLICANT: Taylor, Martin
APPLICANT: Heckel, David G
TITLE OF INVENTION: Method for
TITLE OF INVENTION: Resistan
NUMBER OF SEQUENCES: 40
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                    GENERAL INFORMATION:
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APPLICATION NUMBER: US 60,
FILING DATE: 24-DEC-1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UNBER: US 60,
FILING DATE: 01-MAR-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPOSTATION SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
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APPLICANT: Ingles, Patricla J.
TITLE OF INVENTION: CALCIUM PERMEABLE INSECT SODIUM CHANNELS
TITLE OF INVENTION: AND USE THEREOF
NUMBER OF SEQUENCES: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS: not relevant TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                             Local
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New York
                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
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             E: Darby & Darby PC
805 Third Avenue
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24-DEC-1996
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                                                                                  Resistance
                                                                                                    Method for Monitoring Pesticide
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100.0%; Pred. No.
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STATE: N COUNTRY:

New York

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RESULT 24
US-09-354-147C-7
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; NAME/KEY: UNSURE
; LOCATION: (308)
; OTHER INFORMATION: Xaa is Leu. Xaa results from a "y" in SEQ
US-09-354-147C-7
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Best Local Similarity 100...
Conservative
                                                                                                                                                                                                                                    SOFTWARE: PatentIn Ver. 2.1
SEQ ID NO 7
LENGTH: 1233
TYPE: PRT
ORGANISM: Homo sapiens
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TELEX: 236687
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENGTH: 452 amino acids
TYPE: amino acid
                                                          Query Match 75.0%; Score 21; DB 4; L
Best Local Similarity 100.0%; Pred. No. 1.5e-13;
Matches 21; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 7, Application US/09354147C Patent No. 6573067
                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: ÚS 60/072,990
PRIOR FILING DATE: 1998-01-29
PRIOR APPLICATION NUMBER: ÚS 60/109,402
PRIOR FILING DATE: 1998-11-20
PRIOR APPLICATION NUMBER: PCT/US99/02008
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 44
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APPLICANT: Dib-Hajj, Sulayman
APPLICANT: Waxman, Stephen G.
TITLE OF INVENTION: Modulation of Sodium Channels in Dorsal Root Ganglia
FILE REFERENCE: 44574-5004-01-US
CURRENT APPLICATION NUMBER: US/09/354,147C
CURRENT FILING DATE: 1999-07-16
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TOPOLOGY: linear
MOLECULE TYPE: protein
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NAME: RODINSON, JOSEPH R
REGISTRATION NUMBER: 33,448
REFERENCE/DOCKET NUMBER: 0646/0A939
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/07/998,289B FILING DATE: 30-DEC-1992 CLASSIFICATION: 435
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8 FIIFGSFFTLNLFIGVIIDNF 28
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APPLICANT: U1b-Hajj, Sulayman
APPLICANT: Waxman, Stephen G.
FITTLE OF INVENTION: Modulation of Sodium Channels in Dorsal Root Ganglia
FILE REFERENCE: 44574-5004-01-US
CURRENT APPLICATION NUMBER: US/09/354,147C
CURRENT FILING DATE: 1999-07-16
PRIOR APPLICATION NUMBER: US 60/072,990
PRIOR APPLICATION NUMBER: US 60/109,402
PRIOR FILING DATE: 1998-01-29
PRIOR FILING DATE: 1998-11-20
PRIOR FILING DATE: 1998-11-20
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 44
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 8
Search completed: January 27, 2005, 17:54:19 Job time : 23.5 secs
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US-09-354-147C-8
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                                                                                                                                                                                       Best
                                                                                                                                                                                                               Query Match
                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                    TYPE: PRT
ORGANISM: Homo sapiens
FEATURE:
OTHER INFORMATION: partial human NaN amino acid seq.
                                                                                                                                                                                                                                                                                                                                                               ENGTH: 1243
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                                                                                   1092 FIIFGSFFTLNLFIGVIIDNF 1112
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                                                                                                            FIIFGSFFTLNLFIGVIIDNF 28
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                                                                                                                                                                   75.0%; Score 21; DB 4; L
llarity 100.0%; Pred. No. 1.5e-13;
Conservative 0; Mismatches 0;
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Gapop 60.0 ,
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28
          Match
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          GenCore version 5.1.6 (c) 1993 - 2005 Compugen
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Aam15136 Peptide #
Abb33128 Peptide #
Aabb31291 Peptide #
Abb28960 Peptide #
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Abb19569 Protein #
Aam54918 Human bra
am55160 Human bra
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n02877 Peptide #
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04076 Human sod
528 Rat Prote
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Adb7861
Aab9657563
Abb89679
Adb78606
Aar99639
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Aar9657563
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Adb78606
Aar96597
Add32210
Add32210
Add32210
Add32210
Add51996
Adb7861996
Adb775944
                        7 Human neo
4 Human neo
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5 Human ion
1 Human sod
3 Human sod
6 Human sod
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8 Human sod
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9 Human sod
9 Human sod
1 Human sod
8 Human pro
9 Human pro
9 Human sod
1 Huma
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RESULT 1
AAM15136
                                                  Query Match
Best Local S
Matches 28
                                                                                                                The present invention relates to human single exon nucleic acid probes (SENP: see AAI10068-AAI28459). The present sequence is a peptide encoded by one such probe. The SENPs are derived from human HeLa cells. The SENPs can be used to produce a single exon microarray, which can be used for measuring human gene expression in a sample derived from human cervical epithelial cells. By measuring gene expression, the probes are therefore useful in grading and/or staging of diseases of the cervix, notably cervical cancer. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                   Sequence 405 AA;
                                                                                                                                                                                                                                                        Claim 27; SEQ ID NO 19962; 487pp; English.
                                                                                                                                                                                                                                                                              Human genome-derived single exon nucleic acid probes useful gene expression in human cervical epithelial cells.
                                                                                                                                                                                                                                                                                                                                                Penn
                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-FEB-2000;
26-MAY-2000;
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27-SEP-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200157278-A2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Probe; human; microarray; gene expression; cervical epithelial cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAM15136 standard;
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     158
                                                                                                                                                                                                                                                                                                                                               SG,
              1 GIFFFVSYIIISFLVVVNMYIAVILENF 28
                                                   28;
                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                    MOLECULAR DYNAMICS INC.
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13
GIFFFVSYIIISFLVVVNMYIAVILENF 185
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                                                  Conservative
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2000US-0207456P.
2000US-0060840B.
2000US-00632366.
2000US-0234687P.
2000US-0236559P.
2000US-0236559P.
2000US-0236559P.
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46.4
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1956
                                                            100.0%;
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ADA50144
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                                             Score 28; DB 4; Pred. No. 2.6e-20; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for measuring cervical gene expression.
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                                                                     Length 405;
                                               Indels
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Ada50144 Rat perip
                                             0;
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                                             Gaps
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RESULT 2 ABB34128 ID ABB3 XX

ABB34128 standard; peptide; 405 AA.

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09-AUG-2001 WO200157272-A2 Homo sapiens.

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RESULT 3
AAM27591
                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                 Query Match
Best Local :
genetic disorder.
            Probe; microarray;
                                Peptide #1628 encoded by probe for measuring placental gene
                                                              17-OCT-2001
                                                                                       AAM27591;
                                                                                                                  AAM27591
                                                                                                                                                                                                                                                                                                  The invention relates to a single exon nucleic acid probe for measuring human gene expression in a sample derived from human foetal liver. The single exon nucleic acid probes may be used for predicting, measuring and displaying gene expression in samples derived from human fetal liver. The present sequence is a peptide encoded by a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-AUG-2000;
21-SEP-2000;
27-SEP-2000;
                                                                                                                                                                                                                                                                                    Sequence 405 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human genome-derived single exon nucleic acid probes useful for analyzing gene expression in human fetal liver.
                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 27; SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Penn
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30-JUN-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Peptide #1634 encoded by human foetal liver single exon probe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  04-FEB-2002
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                                                                                                                                                                                                                                  Similarity 100 28; Conservative
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                                                                                                                                                                              GIPPFVSYIIISPLVVVNMYIAVILENF 185
                                                                                                                                                                                                 GIFFFVSYIIISFLVVVNMYIAVILENF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULAR DYNAMICS INC
                                                                                                                 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hanzel
                                                            (first entry)
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2000US-0207456P.
2000US-00608408.
; 2000US-00632366.
; 2000US-0234687P.
2000US-0236359P.
2000US-0236359P.
2000US-0236359P.
                                                                                                                                                                                                                                                                                                                                                                                                                              ID NO 26763;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DK,
                                                                                                                 protein; 405
            human;
                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chen W,
         placenta; antenatal diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                         639pp + Sequence Listing; English.
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                                                                                                                                                                                                                                             Score 28; |
Pred. No. 2
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30-JAN-2001;

2001WO-US000663.

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RESULT 4
ABB280
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AC ABB2
XX
DT 01-F
DX
DX
HUMA
KW HUMA
KW CANC
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HOMO
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Best Local Similarity
Matches 28; Conserv
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26-MAY-2000;
30-JUN-2000;
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                         Penn
                                                                                                                                                                       03-AUG-2000;
21-SEP-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; microarray; single exon probe;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Peptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-488897/53
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27-SEP-2000;
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03-AUG-2000;
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                         SG,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #1611 encoded by breast cell single exon nucleic acid probe.
                                                                          MOLECULAR DYNAMICS INC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 27860; 654pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hanzel DK,
                         Hanzel DK,
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2000US-0207456P.

2000US-0060840B.

; 2000US-00632366.

; 2000US-0234687P.

; 2000US-0236559P.

; 2000US-02065-00024263.
                                                                                                                         2000US-00632366.
2000US-0234687P.
2000US-0236359P.
2000US-00024263.
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                                                                                                                                                                                                                      2000US-0180312P.
2000US-0207456P.
2000US-00608408.
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                       Chen W,
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                         Rank DR;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene expression; breast; disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 405;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
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encoded by one
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cc mucleic acid probes for measuring gene expression in a sample derived cc from human breast and BT 474 cells. The method involves contacting the grobes with a collection of detectably labelled nucleic acids derived cc from mRNA of human breast, and then measuring the label bound to each cc expression of regions of genomic DNA predicted to encode proteins. They care useful for gene discovery, and for determining prediston and/or prognosing breast disease. Gene expression analysis is useful for casessing the toxicity of chemical agents on cells. The microarray of this invention presents a far greater diversity of probes for measuring gene expression, with far less bias than expressed sequence tag microarrays. The method is suitable for rapid production of functional conformation from genomic sequence. The present sequence is a peptide encoded by a single exon nucleic acid probe of the invention. Note: The sequence data for this patent did not form part of the printed conformation, but was obtained in electronic format directly from WIPO
    Best Local Similarity
                       Query Match
                                                                     Sequence 405
                                                                                                                  at ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New spatially-addressable set of single exon nucleic for measuring gene expression in sample derived from comprises number of single exon nucleic acid probes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to a spatially-addressable set
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-496933/54.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27; SEQ ID NO 11928; 327pp + Sequence Listing;
                                                                       Ą,
  100.0%;
Score 28; DB 4;
Pred. No. 2.6e-20;
                       Length 405;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 acid probes,
human breast,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         useful
```

```
Matches
 158
                     28;
Conservative
                       <u>..</u>
                       Mismatches
                       Indels
                       <u>.</u>
                       Gaps
                       0
```

밁 S

```
RESULT 5
ABB19569
                                       Human; gene expression; heart; microarray; vascular system; cardiovascular disease; hypertension; cardiac arrhythmia; congenital heart disease.
                                                                                                                                                                                                                                                                       ABB19569 standard; protein; 405 AA
Homo sapiens.
                                                                                                                                   Protein #1568
                                                                                                                                                                                23-JAN-2002 (first entry)
                                                                                                                                                                                                                               ABB19569;
                                                                                                                                 encoded by probe
                                                                                                                                   for measuring heart
                                                                                                                                   cell gene
```

09-AUG-2001. WO200157274-A2

30-JAN-2001; 2001WO-US000666

04-FEB-2000; 26-MAY-2000; 30-JUN-2000; 03-AUG-2000;

21-SEP-2000;

2000US-0180312P. 2000US-0207456P. 2000US-0060840B. 2000US-00632366. 2000US-0234687P. 2000US-0236359P. 2000US-00024263.

WPI; 2001-488899/53.

Penn SG,

Chen W,

Rank DR;

(MOLE-)

MOLECULAR DYNAMICS Hanzel DK,

```
RESULT 6
AAM67299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 28
                                                                                                                                                                                          04-FEB-2000; 2000US-0180312P.
26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-032366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0236359P.
04-OCT-2000; 2000GB-00024263.
The present invention provides a number of single exon nucleic acid probes which are derived from genomic sequences expressed in the hur bone marrow. They can be used to measure gene expression in bone max
                                                                                                                                               Penn
                                                                                                                                                                       (MOLE-)
                                                                                                                                                                                                                                                                                            30-JAN-2001; 2001WO-US000668
                                                                                                                                                                                                                                                                                                                        09-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                               microarray;
                                                                                                                                                                                                                                                                                                                                                                                                            Human; bone
                                                                                                                                                                                                                                                                                                                                                                                                                              Human bone marrow expressed probe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention relates to single exon nucleic acid probes for measuring human gene expression in a sample derived from human heart (see ABA21535-ABA41305). The present sequence is a protein encoded by one such probe. The probes may be used for predicting, measuring and displaying gene expression in samples derived from the human heart via microarrays. diagnosting gene expression, the probes are useful for predicting, by measuring gene expression, the probes are useful for predicting, diagnosting, grading, staging, monitoring and prognosing diseases of the human heart and vascular system e.g. cardiovascular disease. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from WIPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                            06-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAM67299;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAM67299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Single hearts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                              SG,
                                                                                 expression
                                                                                       genome-derived single exon nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          158
                                                                                                                                                                   MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard; protein; 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GIFFFVSYIIISFLVVVNYIAVILENF 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GIFFFVSYIIISFLVVVNMYIAVILENF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         405 AA;
                                                                                                                                            Hanzel DK,
                                               SEQ ID NO 27605; 658pp + Sequence Listing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                               cancer;
                                                                                                                                                                                                                                                                                                                                                                                                           marrow
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                 in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ĕ
                                                                                 human
                                                                                                                                                                                                                                                                                                                                                                                                       expressed exon;
                                                                                                                                                                                                                                                                                                                                                                                            leukaemia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21339; 530pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 acid
                                                                                                                                          Chen W,
                                                                               bone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                probes for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                               marrow.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 28; DB 4;
Pred. No. 2.6e-20;
Mismatches 0;
                                                                                                                                           Rank
                                                                                                                                                                                                                                                                                                                                                                                         lymphoma; myeloma.
                                                                                                                                                                                                                                                                                                                                                                                                                            encoded protein
                                                                                                                                                                                                                                                                                                                                                                                                    gene expression analysis; probe;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         English.
                                                                                                                                          뮸
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           analyzing gene expression
                                                                                       acid
                                                                                  probes useful for analyzing
expression in bone marrow
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 405;
                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                               English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                            27605.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ä
             human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
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밁 Ś

158

GIFFFVSYIIISFLVVVNMYIAVILENF 185 GIFFFVSYIIISFLVVVNMYIAVILENF 28 Matches

Conservative

0,

100.0%;

Score 28; DE Pred. No. 2.6 0; Mismatches

2.6e-B 4

Length 405;

Indels

0

Gaps

0

.0%;

Query Match Best Local Similarity

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RESULT 7

AAM54918

ID MA454918

XX AAM5

AC AAM5

XX AAM5

XX Huma

XX Huma

XX Homo

PN W020

XX Homo

PN W020

XX Homo

XX Hom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ន្តន្តន្តន្ត
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   04-FEB-2000; 2000US-0180312P.
26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-032366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0236359P.
04-OCT-2000; 2000GB-00024263.
  Sequence 405
                                                    probes which are derived from genomic sequences expressed intelest acid brain. They can be used to measure gene expression in brain cell samples, which may enable the diagnosis and improved treatment of nervous system diseases such as Alzheimer's disease, multiple sclerosis, schizophrenia, epilepsy and cancers. The present sequence is a protein encoded by one of the probes of the invention
                                                                                                                                                                                                                                                          Example 4; SEQ ID NO 27023; 650pp + Sequence Listing;
                                                                                                                                                                                                                                                                                                                                                             Single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-JAN-2001; 2001WO-US000667.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (MOLE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200157275-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human brain expressed single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            05-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alzheimer's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAM54918;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAM54918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             samples, which may enable the improved diagnosis and treatment of cancers such as lymphoma, leukaemia and myeloma. The present sequence is a protein encoded by one of the probes of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 405 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SG,
                                                                                                                                                                                                                                                                                                                                                                                                            2001-483446/52.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              158
                                                                                                                                                                                                                                                                                                                                         exon nucleic acid probes for analyzing gene expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 brain expressed exon; gene expression analysis; probe; microarray; mer's disease; multiple sclerosis; schizophrenia; epilepsy; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GIFFFVSYIIISFLVVVNMYIAVILENF 28
GIFFFVSYIIISFLVVVNMYIAVILENF 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hanzel DK,
                                                                                                                                                                                                   invention provides a number of single exon nucleic
ă,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first
                                                 invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chen
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 28; DB 4;
Pred. No. 2.6e-20;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rank DR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         probe encoded protein SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                          English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                               ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
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4

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RESULT 8

ANN56160
ID AAMS6160
ANN56160
AXX AAMS
AXX AAMS
AXX Huma
XXX Huma
XXX Huma
XXX Homo
XX Homo
XX A1zh
A2 A6-M

RESULT 9
ABG48961
ID ABG4
XX ABG4
XX ABG4
XX ABG4
XX ABG4
XX Huma
XX Huma
XX Huma
XX Huma
XX Huma
                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                             ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention provides a number of single exon nucleic acid probes which are derived from genomic sequences expressed in the human probes which are be used to measure gene expression in brain cell samples, which may enable the diagnosis and improved treatment of nervous system diseases such as Alzheimer's disease, multiple sclerosis, schizophrenia,
                       Human; liver; cirrhosis; hyperlipoproteinaemia; hyperlipidaemia; hypercholesterolaemia; coronary heart disease.
                                                                                                   Human liver
                                                                                                                                                     25-FEB-2003
                                                                                                                                                                                                    ABG48961;
                                                                                                                                                                                                                                                   ABG48961 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 405 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 epilepsy and cancers. The present sequence is a protein encoded the probes of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 4; SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Single exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2001-483446/52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Penn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26-MAY-2000;
30-JUN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-JAN-2001; 2001WO-US000667.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200157275-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; brain expressed exon; gene expression analysis; probe; microarray;
Alzheimer's disease; multiple sclerosis; schizophrenia; epilepsy; cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human brain expressed single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAM56160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAM56160 standard; protein; 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MOLE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                              158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28;
                                                                                                                                                                                                                                                                                                                                                                                                                               μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULAR DYNAMICS INC
                                                                                                                                                                                                                                                                                                                                                                                                          GIFFFVSYIIISFLVVVNMYIAVILENF 28
                                                                                                                                                                                                                                                                                                                                                                              GIFFFVSYIIISFLVVVNMYIAVILENF 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hanzel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7, 2000US-0180312P.
2000US-0207456P.
2000US-0060840B.
2000US-00632366.
2000US-0234687P.
2000US-0236359P.
2000US-0236359B.
2000US-0024263.
                                                                                                   peptide,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nucleic acid
                                                                                                                                                  (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ID NO 28265; 650pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DK,
                                                                                                                                                  entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
                                                                                                   SEQ ID No 27609.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 probes
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                                                                                                                                                                                                                                                     405
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 28; DB 4;
Pred. No. 2.6e-20;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 405;
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RESULT 10
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Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                  The invention relates to a single exon nucleic acid probe (SENP) (1) for measuring human gene expression in a sample derived from human adult liver, comprising one of 13109 defined nucleotide sequences given in the specification (or complements) fragments). The probe hybridises at high stringency to a nucleic acid molecule expressed in the human adult liver. (I) may be used for predicting, measuring and displaying gene expression in samples derived from human adult liver. The genes identified may be involved in genetic liver diseases such as cirrhosis, hyperlipoproteinaemia, hyperlipidaemia and hypercholesterolaemia which is associated with coronary heart disease. ABG47348-ABG5930 represent human liver single exon encoded peptides of the invention. Note: The sequence information for this patent does not appear in the printed specification but was obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26-MAY-2000;
30-JUN-2000;
03-AUG-2000;
                                                                                                                                                                            09-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
29-JAN-2001; 2001WO-US000661.
                         09-AUG-2001.
                                                   WO200157270-A2
                                                                              Homo sapiens.
                                                                                                                    Probe; human; breast disease; breast cancer; development disorder;
                                                                                                                                               Peptide #1559
                                                                                                                                                                                                       AAM02877;
                                                                                                                                                                                                                               AAM02877 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human genome-derived single exon nucleic acid gene expression in human adult liver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2001-488898/53.
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27-SEP-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-JAN-2001; 2001WO-US000664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09-AUG-2001.
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                                                                                                                                                                                                                                                                                                                                                                                                                                        ftp.wipo.int/pub/published_pct_sequences
                                                                                                       inflammatory
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                                                                                                                                                                                                                                                                                                                  1 GIFFFVSYIIISFLVVVNMYIAVILENF 28
                                                                                                                                                                                                                                                                                                                                                        28;
                                                                                                                                                                                                                                                                                                                                                                     Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                               405
                                                                                                                                                                                                                                                                                                   GIFFFVSYIIISFLVVVNMYIAVILENF 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ
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2000US-0207456P.
; 2000US-0060840B.
; 2000US-00632366.
; 2000US-0234687P.
; 2000US-0236359P.
; 2000US-00024263.
                                                                                                                                                                                                                                                                                                                                                     100.0%; Score 28; DB 4; ilarity 100.0%; Pred. No. 2.6e-20; Conservative 0; Mismatches 0;
                                                                                                       disease;
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                                                                                                                                                                          (first entry)
                                                                                                                                              encoded by probe
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                                                                                                      proliferative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chen W,
                                                                                                                                                                                                                                  405
                                                                                                                                              for measuring breast gene expression.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DR;
                                                                                                          disease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        probes useful for analyzing
                                                                                                                                                                                                                                                                                                                                                                                   Length 405;
                                                                                                         non-carcinoma tumour.
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AAM04075
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Best Local S
Matches 28
  04-FEB-2000;
26-MAY-2000;
30-JUN-2000;
03-AUG-2000;
21-SEP-2000;
27-SEP-2000;
04-OCT-2000;
                                                                                                                                                                        Probe; human; breast disease; breast cancer; development disorder; inflammatory disease; proliferative breast disease; non-carcinoma tumour.
                                                                                             29-JAN-2001;
                                                                                                                      09-AUG-2001
                                                                                                                                          WO200157270-A2
                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                              09-OCT-2001
                                                                                                                                                                                                                                                                                      AAM04075 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention relates to novel single exon nucleic acid probes (see AA100010-AA110067). The present sequence is a peptide encoded by one such probe. The probes are useful for measuring human gene expression in nucleic acid expressed in the human breast. The probes are useful for predicting, disgnosing, grading, staging, monitoring and prognosing diseases of the human breast particularly those diseases with polygenic inflammatory diseases include: breast cancer, disorders of development, breast disease and non-carcinoma tumours. Note: The sequence data for obtained in electronic format directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-FEB-2000; 2000US-0180312P.
26-MAY-2000; 2000US-0207456P.
30-JUN-2000; 2000US-00608408.
03-AUG-2000; 2000US-03366.
21-SEP-2000; 2000US-0234687P.
27-SEP-2000; 2000US-0236359P.
04-OCT-2000; 2000GB-00024263.
                                                                                                                                                                                                                                                                      AAM04075;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 405 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Novel single exon nucleic acid probe used to measuring
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                                                                                                                                                                                                                        #2757
                                                                                                                                                                                                                                                                                                                                                          1 GIFFFVSYIIISFLVVVNMYIAVILENF 28
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; 2000US-0180312P.
2000US-0207456P.
2000US-0060840B.
2000US-00632366.
2000US-023468PP.
2000US-02363599; 2000US-0236359.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 11617;
                                                                                          2001WO-US000661.
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                                                                                                                                                                                                                                                                                                                                                                                          ilarity 100.0%; s
Conservative 0;
                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                          encoded by probe for measuring breast gene expression.
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                                                                                                                                                                                                                                                                                        405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       322pp; English.
                                                                                                                                                                                                                                                                                                                                                                                      Score 28; DB 4;
Pred. No. 2.6e-20;
Mismatches 0;
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RESULT 12
ABG36946
ADG 36946
ADG 36946
AXX ABG36
AXX ABG36
AXX ABG36
AXX Human
AXX Human
AXX Chron
AXX Chron
AXX Chron
AXX Hermal
AXX Hermal
AXX Pulno
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                   04-FEB-2000;
26-MAY-2000;
30-JUN-2000;
03-AUG-2000;
21-SEP-2000;
27-SEP-2000;
04-OCT-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                Human; single exon probe; asthma; lung cancer; COPD; ILD; chronic obstructive pulmonary disease; interstitial lung disease; familial idiopathic pulmonary fibrosis; neurofibromatosis; tuberous sclerosis; Gaucher's disease; Niemann-Pick disease; Hermansky-Pudlak syndrome; sarcoidosis; pulmonary haemosiderosis; pulmonary haetocytosis; lymphangioleiomyomtosis; Karagener syndrome; pulmonary alveolar proteinosis; fibrocystic pulmonary dysplasia; primary ciliary dyskinesis; pulmonary haemosiderosis; primary ciliary dyskinesis; pulmonary hypertension;
                                                                                                                                                                                                                          30-JAN-2001; 2001WO-US000665
                                                                                                                                                                                                                                                                                                                                       WO200186003-A2
                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human peptide encoded by genome-derived single exon probe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention relates to novel single exon nucleic acid probes (see AAI00010-AAI10067). The present sequence is a peptide encoded by one such probe. The probes are useful for measuring human gene expression in nucleic acid expressed in the human breast. The probes at high stringency to a predicting, disgnosing, grading, staying, monitoring and prognosing aeticlogy. The human breast, particularly those diseases with polygenic inflammatory diseases include: breast cancer, disorders of development, breast disease and non-carcinoma tumours. Note: The sequence data for obtained in electronic format directly from WIPO at
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                       ; 2000US-0180312P
2000US-0207456P
2000US-0068408
2000US-0063236
2000US-0234687P
2000US-0236359P
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ilarity 100.0%;
Conservative (
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Pred. No. 2.6e-20;
Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CC comprising (a) identifying exons from genomic sequence by the method CC above and (b) measuring the expression of each of the exons in several CC tissues and/or cell types using hybridisation to a single exon CC microarrays having a probe with the exon, where a common pattern of CC expression of the exons in the tissues and/or cell types indicates that CC the exons should be assigned to a single gene; a peptide comprising one CC probes/open reading frames (ORF). The probes are used for gene expression CC analysis, and for identifying exons in a gene, particularly using human CC lung derived mRNA and for the study of lung disease such as asthma, lung CC disease (ILD), familial idiopathic pulmonary fibrosis, neurofibromatosis, CC tuberous sclerosis, Gaucher's disease, Niemann-Pick disease, Hermansky-CC histlocytosis, lymphangiolelomyomcosis, pulmonary alveolar proteinosis, CC dyskinesis, pulmonary hypertension and hyaline membrane disease. The greener syndrome, is a peptide/protein encoded by a single exon probe of the invention. Note: The sequence data for this patent did not form part CC directly from WIPO at fip. wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               probes. Also included are a microarray comprising the novel set of probes the novel set of probes which hybridise at high stringency to a nucleic acid expressed in the human lung, measuring gene expression in a sample derived from human lung, comprising (a) contacting the array with a collection of detectably labeled nucleic acids derived from human lung mRNA, and (b) measuring the label detectably bound to each probe of the array; identifying exons in a eukaryotic genome, comprising (a) algorithmically predicting at least one exon from genomic sequences of the eukaryote; and (b) detecting specific hybridisation of detectably labeled nucleic acids from eukaryote lung mRNA, to a single exon probe, having a fragment identical to the predicted exon, the probe is included in the above mentioned microarray; assigning exons to a single gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to a spatially-addressable set of single exon nucleic acid probes for measuring gene expression in a sample derived from human lung comprising single exon nucleic acid probes having one of 12614 nucleic acid sequences mentioned in the specification, or their complements or the 12387 open reading frames derived from the 12614 nucleic acid sequences are reading frames derived from the 12614 nucleic sequences.
mutein; mutant; ion channel; ion channel subunit; ICS; nootropic;
neuroprotective; inotropic; antipyretic; antiarrhythmic; antimigraine;
                                                                    Human sodium channel subunit mutant SEQ ID NO:141
                                                                                                                                                                                                              ADB78597 standard; protein; 1855 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 27; SEQ ID NO 26611; 634pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Spatially-addressable set of single exon nucleic acid probes, used to measure gene expression in human lung samples.
                                                                                                                                                                                                                                                                                                                                                            1 GIFFFVSYIIISFLVVVNMYIAVILENF 28
                                                                                                                                                                                                                                                                                                                                                                                                                              l Similarity
28; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 28; DB 5;
100.0%; Pred. No. 2.6e-20;
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RESULT 14 ADB78607 ID ADB78

ADB78607 standard; protein; 1950 AA.

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CC antiarrhythmic, antimigraine, antidepressant, antiparkinsonian, converoleptic, tranquiliser, analgesic, nephrotropic, antidiabetic, and cophthalmological activity. A polynucleotide of the invention acts as an conclusion channel agonist, or ion channel antagonist. The methods, isolated mucleic acids, polypeptides, antibody, selective agonist, antagonist or combilator of an ion channel, cells and genetically modified non-human companies. The methods isolated combinated minal, are useful for the diagnosis and treatment of epilepsy and/or a companies. The periodic paralysis, myotonias, malignant hyperthermia, cardiac arrhythmias, episodic attaxia, migraine, Alzheimer's compasthenia, cardiac arrhythmias, episodic attaxia, migraine, Alzheimer's compassion, phobic obsessive symptoms, neuropathic pain, inflammatory companies, congenital stationary night blindness and total colour colours, constitution. The sequence represents a mutant protein of the correction. The sequence data for this patent is not represented in the printed specification, but was obtained in electronic format directly conformation and total colour colour colour colours. The present sequence represents a mutant protein of the colour col
                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                   Query Match
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05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
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nephrotropic; antidiabetic; ophthalmological; epilepsy;
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                                                                                                                                                                                                                   Local Similarity
les 28; Conserv
1 GIFFFVSYIIISFLVVVNMYIAVILENF 28
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, Scheffer
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Pred. No. 1e-19;
                                                                                                                                                                                                                   Mismatches
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cc predisposed to a disorder associated with ion channel dysfunction. The method comprises ascertaining if at least one of the genes encoding ion channel subunits (ICS) has undergone a mutation event so that a cDNA cc derived from the subject has any of 134 nucleotide sequences. The method cof the invention has mostropic, neuroprotective, inotropic, antipyretic, antipyretic, reuroleptic, tranquiliser, antidepressant, antiparkinsonian, comphital activity. A polynucleotide of the invention acts as an cotropic of an ion channel antisposition, entitled better as a comphital mological activity. A polynucleotide of the invention acts as an cotropic canidal activity. A polynucleotide of the invention acts as an uncleic acids, polypeptides, antibody, selective agonist, antagonist or modulator of an ion channel, cells and genetically modified non-human cc animal, are useful for the diagnosis and treatment of epilepsy and/or a complete deviation of the diagnosis and treatment of epilepsy and/or a complete periodic paralysis, mytotonias, malignant hyperthermia, cardiac arrhythmias, episodic ataxia, migratine, Alzheimer's disease, Parkinson's disease, schizophrenia, hyperthexia, anxiety, compared to the proper antipolation consensive symptoms, neuropathic pain, inflammatory compared to the proper sent sequence represents a mutant protein of the invention. The sequence data for this patent is not represented in the comparited specification, but was obtained in electronic format directly xxx
           Query Match
Best Local
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05-MAR-2002; 2002AU-00000910.
13-MAY-2002; 2002AU-00002292.
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Scheffer IE;
100.0%; Score 28; DB 7; 1
100.0%; Pred. No. 1.1e-19;
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Matches

Similarity

Conservative

Mismatches

Length 1950;

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Gaps

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RESULT 15
ADE59628
ID ADE59628
XX ADE59
XX ADE59
XX ADE59
XX ADE59
XX ADE59
XX Rat;
KW Rat;
KW Chror
XX Rattl
XX Rattl
XX Rattl
XX CAPPI
PR 11-Al
PR 11-Al
PR 11-Al
PR 11-Al
PR 11-Al
PR 10-N
PR 26-N
PR 16-N

                                                                               The invention discloses a composition comprising two or more isolated rat CC or human polynucleotides or a polynucleotide which represents a fragment, CC derivative or allelic variation of the nucleic acid sequence. Also CC claimed are a vector comprising the nucleic acid sequence which is differentially regulated in an animal subjected to pain and a cC kit to perform the method, an array, a method for identifying an agent cC that is differentially expressed in neuronal tissue of a first animal cC subjected to pain, a method for identifying a compound which regulates the expression of a polynucleotide sequence the expression of a polynucleotide sequence cC compound that regulates the activity of one or more of the polynucleotides, a method for identifying a compound that regulates the activity of one or more of the specification, a method for identifying a compound that regulates the activity of one or more of the specification, a method for identifying a compound useful in treating pain and a pharmaceutical composition comprising the one or more polyneptides or their antibodies. The polynucleotide or the compound that modulates its activity is useful for preparing a medicament for treating pain (e.g. spinal segmental nerve injury (Chung), chronic construction conjury (CCI) and spared nerve injury (SNI) in an animal (e.g. gene cc the specification, but was obtained in electronic form directly from WIPO at the medicament and that segmented are a rat protein (shown in Table 2 of the specification, but was obtained in electronic form directly from WIPO at the control of the printed cc final pain the ore appared to this patent did not form part of the printed cc final control of the printed in the final control of the printed cc final control of the printed contro
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New composition comprising two or more isolated polypeptides, useful for preparing a medicament for treating pain in an animal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; Page; 1017pp; English.
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01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
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BAYER AG.
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Best Local Similarity
                                                                                                                                                                                                                                                        The present invention relates to the isolation of human tumour-associated antigenic target (TAT) polynucleotide and polypeptide sequences. Also disclosed is an antibody that binds to a TAT polypeptide. The antibody is a monoclonal antibody an antibody fragment, a chimeric antibody or a humanised antibody. It is conjugated to a growth inhibitory agent. It is produced in bacteria or in CHO cells and induces death of a cell to which it binds. The antibody is useful for preparing a composition for diagnosing or treating tumours and cancer. The present sequence represents a human TAT polypeptide of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Desauvage FJ, r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New antibody that binds to a tumor-associated antigenic target polypeptide, useful for preparing a composition for diagnosing
                                                                                                                                                                                                                 Sequence 1951 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 2; SEQ ID NO 156; 319pp; English.
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15-OCT-2002;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; tumour-associated antigenic target; TAT; cell death; tumour;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human tumour-associated antigenic target (TAT) polypeptide #75.
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                                                                                                                                   Similarity
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GIFFFVSYIIISFLVVVMYIAVILENF 1725
                           GIFFFVSYIIISFLVVVNMYIAVILENF 28
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; 2002US-0405645P.
; 2002US-0413192P.
; 2002US-0419008P.
; 2002US-0426847P.
; 2003US-0484959P.
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                                                                                                       Conservative
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hu TD, Zhan
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Smith V;
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RESULT 17
AAE20511
The present sequence is novel human protein (NHP), ion channel protein. CC MHP share structural similarity with mammalian sodium channel proteins. CC particularly voltage-gated sodium channel proteins. NHP oligonuclectides CC particularly voltage-gated sodium channel proteins. NHP oligonuclectides CC are useful as hybridisation probes for screening libraries and assessing gene expression patterns. Sequences derived from regions adjacent to the CC intron/exon boundaries of MHP gene can be used to design primers for use in the intronice in the can be used in diagnostics and pharmacogenomics. NHP mucleotide sequences are useful for drug screening effective in the CC treatment of symptomatic or phenotypic manifestations of perturbing the cormal function of NHP in the body, and nucleotide constructs encoding CC NHP products are useful to genetically engineer host cells to express NHP products in vivo. These genetically engineered cells function as CC bioreactors in the body delivering a continuous supply of a NHP, a NHP CC peptide, or a NHP fusion protein to the body. Nucleotide construct CC expression and to product genetically engineered host cells to express CC NHP products are also useful in gene therapy for modulating NHP conducts are also useful in gene therapy for modulating NHP conducts in vivo. NHP nucleotide sequences may also be used as part of ribozyme and/or triple helix sequences that are useful for NHP gene CC readents in diagnostic assays, for identifying other cellular gene CC compounds that are useful in the treatment of mental, biological or compounds that are useful in the treatment of mental, biological or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; Page 37-41; 83pp; English.
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                                     disorders and diseases
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disorder; biological disorder;
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RESULT 18

ID AAB20516

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FT Mis
CC RHP share structural similarity with mammalian sodium channel protein. CC NHP share structural similarity with mammalian sodium channel proteins. CC particularly voltage-gated sodium channel proteins. NHP oligonuclectides CC are useful as hybridisation probes for screening libraries and assessing CC gene expression patterns. Sequences derived from regions adjacent to the cC intron/exon boundaries of NHP gene can be used to design primers for use CC in amplification assays to detect mutations within the exons, splice cC sites, introns that can be used in diagnostics and pharmacogenomics. NHP creatment of symptomatic or phenotypic manifestations of perturbing the cC normal function of NHP in the body, and nucleotide constructs encoding CC products in vivo. These genetically engineer host cells to express NHP products are useful to genetically engineered cells function as CC peptide, or a NHP fusion protein to the body. Nucleotide construct expression and to produce genetically engineered host cells to express CC peptide, or a NHP fusion protein to the body. Nucleotide construct expression and to produce genetically engineered host cells to express CC peptide, or a NHP fusion protein to the body. Nucleotide construct expression and to produce genetically engineered host cells to express CC of ribozyme and/or triple helix sequences may also be used as part regulation. The NHP polypeptides are useful for generating antibodies, as products related to NHP and as reagents in assays for screening for medical discorders and discorders and discorders in the treatment of mental, biological or
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; Page 64-68; 83pp; English.
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RESULT 19
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                                                                                                                                                                         Query Match
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Best Local S
                                                                                                                                                                                                                                                       The invention relates to a recombinantly expressed and isolated human SCNIA (sodium channel type I alpha-subunit) (I). (I), optionally incorporated into a cell, is used to screen for specific modulators, potentially useful as anticonvulsant, antiepileptic, neuroprotective, analgesic and/or anesthetic agents, e.g. for treating severe mycolonic motor endplate diseases, hypertension, congestive heart failure and muscular dystrophy also to treat cancer (SCNIA is expressed in prostatic and metastatic cancer cell lines). These activities can also be provided modulators, also antibodies directed against (I), are used to detect sodium channel polypeptides. The present sequence represents a human SCNIA splice variant 84P:SCNIADELD654-681
                                                                                                                                                                                                                          Sequence 1981 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Page 162-169; 176pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Recombinantly expressed sodium channel type 1 alpha subunit, useful screening for modulators, for treating e.g. epilepsy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2003-712725/67.
N-PSDB; ACF57880.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (UYVA-) UNIV VANDERBILT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04-SEP-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-JAN-2004 (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1973 AA,
                                                                                                                                                Loca1
1762 GIFFFVSYIIISFLVVVNMYIAVILENF 1789
                                                                                                                   28;
                                                                                                             Similarity 100.
28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
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                                                                                                                                    100.0%;
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100.0%; Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -84P:SCN1ADELp654-681.
                                                                                                       Score 28; DB
Pred. No. 1.1
0; Mismatches
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                                                                                                                                                              В
                                                                                                                              .1e-19
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                                                                                                                                                        Length 1981;
                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1973;
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                                                                                                    Gaps
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01-JUL-2002 AAE20510;

(first

AAE20510 standard;

protein; 1998

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In Leury Boom boundaries of Mar your control of the exong, splice in amplification assays to detect mutations within the exong, splice constructs, introns that can be used in diagnostics and pharmacogenomics. NHP conclectide sequences are useful for drug screening effective in the cream of treatment of symptomatic or phenotypic manifestations of perturbing the commal function of NHP in the body, and nucleotide constructs encoding the products are useful to genetically engineer host cells to express NHP compounds in the body delivering a continuous supply of a NHP, a NHP coloreactors in the body delivering a continuous supply of a NHP, a NHP coloreactors in the body delivering a continuous supply of a NHP, a NHP coloreactors in the body delivering a continuous supply of a NHP, a NHP coloride, or a NHP fusion protein to the body. Nucleotide construct concoding NHP products are also useful in gene therapy for modulating NHP corporates in vivo. NHP nucleotide sequences may also be used as part of ribozyme and/or triple helix sequences that are useful for NHP gene creagants in diagnostic assays, for identifying other cellular gene compounds that are useful in the treatment of mental, biological or and diagnostic assays, for identifying other cellular gene compounds that are useful in the treatment of mental, biological or
  Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 28; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present sequence is novel human protein (NHP), ion channel protein. NHP share structural similarity with mammalian sodium channel proteins particularly voltage-gated sodium channel proteins. NHP oligonucleotides are useful as hybridisation probes for screening libraries and assessing gene expression patterns. Sequences derived from regions adjacent to the intron/exon boundaries of NHP gene can be used to design primers for use
                                                                                   Sequence 1998 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 1; Page 30-34; 83pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Novel polynucleotides encoding human sodium channel proteins, particularly voltage-gated sodium channel proteins useful for drug screening, diagnosis and in gene therapy of biological disorders.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human ion channel protein #1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (LEXI-) LEXICON GENETICS INC.
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                                                                                                                        disorders and diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mathur B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human protein; NHP; voltage-gated sodium bioreactor; mental disorder; biological
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers 981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note= "Encoded by RCA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note= "Encoded by MTG"
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Score 28; DB 5; I
Pred. No. 1.1e-19;
; Mismatches 0;
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                                      Length 1998;
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disorder;
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Indels

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Gaps

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RESULT 22 ABB06026

ABB06026;

ABB06026 standard; protein; 1999

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RESULT 21
ABR83184
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                                                             Matches
                                                                          Query Match
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                                                                                                                                                  The invention relates to a recombinantly expressed and isolated human SCNIA (sodium channel type I alpha-subunit) (I). (I), optionally incorporated into a cell, is used to screen for specific modulators, potentially useful as anticonvulsant, antiepileptic, neuroprotective, analgesic and/or anesthetic agents, e.g. for treating severe myoclonic epilepsy of infancy, stroke, cardiac arrest, hyperkalemic paralysis, motor endplate diseases, hypertension, congestive heart failure and muscular dystrophy also to treat cancer (SCNIA is expressed in prostatic and metastatic cancer cell lines). These activities can also be provided by gene therapy vectors that express (I) or the modulators. The modulators, also antibodies directed against (I), are used to detect sodium channel polypepides. The present sequence represents a human SCNIA splice variant 33P:SCNIADELp671-681 encoding cDNA
                                                                                                                          Sequence 1998 AA;
                                                                                                                                                                                                                                                                                                                                                                                                         Recombinantly expressed sodium channel type 1 alpha subunit, useful in screening for modulators, for treating e.g. epilepsy.
                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Page 148-156; 176pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SCNIA; sodium channel type 1 alpha-subunit; anticonvulsant; analgesic; neuroprotective; anesthetic; cytostatic; cerebroprotective; cardiant; hypotensive; gene therapy; human; splice variant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2003-712725/67.
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1751
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                                                          28;
                             1 GIFFFVSYIIISFLVVVNMYIAVILENF 28
                                                                            Similarity
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                                                                         100.0%;
                                                            0,
                                                                          Score 28; DB 7;
Pred. No. 1.1e-19;
                                                            Mismatches
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                                                                                           Length 1998;
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                                                            Gaps
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RESULT 23
ABB06027
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Best Local Similarity
Matches 28; Conserv
 13-JUN-2000;
                     12-JUN-2001; 2001WO-JP004956.
                                               20-DEC-2001
                                                                     WO200196552-A1
                                                                                             Homo sapiens.
                                                                                                             Human; sodium channel; SCN3A; chromosome 2q24-31; familial hypercalcaemic periodic paralysis; motor endplate disease.
                                                                                                                                                      Human sodium
                                                                                                                                                                            10-MAY-2002
                                                                                                                                                                                                    ABB06027;
                                                                                                                                                                                                                         ABB06027 standard;
                                                                                                                                                                                                                                                                                                                                                                                                       The present invention describes human sodium channels SCNIA and SCNIA. The present sequence represents the human sodium channel SCNIA SCNIA and SCNIA have been located to the human chromosome 2 long arm, positions 2q24 and 2q24-31 respectively. The sodium channel proteins are useful in studying the physiological mechanism in which excitant cells participate and cause human diseases, and in developing remedies for e.g. familial hypercalcaemic periodic paralysis of extremities and motor endplate
                                                                                                                                                                                                                                                                                                                                                                              Sequence 1999 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human sodium channels SCN1A and SCN3A and encoded genes, useful in studying physiological mechanism in which excitant cells participate causes of diseases and developing drugs for motor endplate disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1; Page 40-49; 88pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; so familial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-JUN-2000;
13-JUN-2000;
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al hypercalcaemic periodic paralysis; motor endplate disease.
                                                                                                                                                                                                                                                                                               GIFFFVSYIIISFLVVVNMYIAVILENF 28
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2000JP-00177540
                                                                                                                                                     channel
                                                                                                                                                                          (first entry)
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2000JP-00177544.
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                                                                                                                                                                                                                        protein;
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                                                                                                                                                  SCN3A protein
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Pred. No. 1.1e-19;
; Mismatches 0;
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                                                                                                                                                  SEQ ID NO:4.
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RESULT 24
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AC ADX81
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                                                                            New antisense compound targeted to a nucleic acid molecule encoding Nav1.3, useful for useful for treating a disease or condition assocwith Nav1.3, e.g. pain, seizure disorder such as childhood seizure disorder, or ataxia.
                                                                                                                                                                                                                      WPI; 2004-203785/19.
N-PSDB; ADK81761.
                                                                                                                                                                                                                                                                                                           Roberds
                                                                                                                                                                                                                                                                                                                                                                                                               14-AUG-2002; 2002US-0403416P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human Nav1.3 protein.
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                                                                                                                                                                                                                                                                                                                                                                (PHAA ) PHARMACIA CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            infantile epilepsy; ataxia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present invention describes human sodium channels SCNIA and SCNIA. The present sequence represents the human sodium channel SCNIA. SCNIA and SCNIA have been located to the human chromosome 2 long arm, positions 2924 and 2924-31 respectively. The sodium channel proteins are useful in studying the physiological mechanism in which excitant cells participate and cause human diseases, and in developing remedies for e.g. familial hypercalcaemic periodic paralysis of extremities and motor endplate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2000 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 2; Page 72-81; 88pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human sodium channels SCN1A and SCN3A and encoded genes, useful in studying physiological mechanism in which excitant cells participate and causes of diseases and developing drugs for motor endplate disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13-JUN-2000; 2000JP-00177544.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2002-098066/13.
DB; ABL39690.
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                                                                                                                                                                                                                                                                                                           SI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           h 100.0%;
Similarity 100.0%;
28; Conservative 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GIFFFVSYIIISELVVVNMYIAVILENF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Goto J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Jeong
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 28; DB 5;
Pred. No. 1.1e-19;
); Mismatches 0;
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                                                                                                                           condition associated
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SCN1A and
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Disclosure;

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                           individual's predisposition to epilepsy and/or development of epilepsy, as well as predicting the individual's response to medication. The method comprises determining the genotype of at least one gene selected from SCN1A, SCN2A or SCN3A, or a DNA variant, equivalent, or mutation which shows a linkage disequilibrium. SCN1A, SCN2A and SCN3A are all sodium channel genes located on chromosome 2. The idiopathic generalised epilepsy (IGE) gene is more specifically localised on chromosome 2923-931. Compounds identified as modulators of the biological activity of SCN1A, SCN2A or SCN3A proteins or genes, are useful for treating epilepsy or other neurological disorders. They have anticonvulsant and neuroprotective activities. AAH55763 to AH55164 and AAB99674 to AAB99679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention relates to an antisense compound targeted to a nucleic acid molecule encoding Navl.3, where the antisense compound specifically hybridizes with and inhibits the expression of Navl.3. The compound and composition are useful for treating a disease or condition associated with Navl.3, e.g. pain including but not limited to neuropathic pain, post-herpetic neuralgia, chronic pain, lower back pain, diabetic neuropathy, trigeminal neuropathy, arthritic pain, acute pain, pain from burns, migraine headache, cluster headache, mild-to-moderate headache; seizure disorder such as childhood seizure disorder, including but not limited to neonatal or infantile epilepsy; or ataxia. The present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Determining a predisposition to epilepsy and/or development of epilepsy comprises determining the genotype of SCN1A, SCN2A and/or SCN3A, or a DNA variant, equivalent, or mutation which shows a linkage disequilibrium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                              The present invention describes a method (M1) of determining an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Page 123-130; 268pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-355945/37.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rouleau GA, Lafreniere RG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (UYMC-) UNIV MCGILL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26-NOV-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  anticonvulsant; neuroprotective.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; epilepsy; chromosome 2; SCN1A; SCN2A; SCN3A; identification; diagnosis; mutation; chromosome 2q23-q31; neurological disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human adult form of SCN2A protein sequence SEQ ID NO:35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-SEP-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rochefort D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2005
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Best Local Similarity
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                                                                         Sequence 2005 AA;
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1 GIFFFVSYIIISFLVVVNMYIAVILENF 28
                             Conservative
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                                         Score 28; DB 4; Pred. No. 1.1e-19;
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Search completed: January 27, 2005, 17:45:18 Job time: 88.5 secs

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C.Superfamily: sodium channel protein
C.Superfamily: sodium channel protein
C.Keywords: duplication; sodium channel; transmembrane protein; voltage-gated ion
F;20-43/Domain: transmembrane #status predicted <TM2>
F;55-78/Domain: transmembrane #status predicted <TM2>
F;85-108/Domain: transmembrane #status predicted <TM3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Lu, C.M.; Han, J.; Rado, T.A.; Brown, G.B.
FBBS Lett. 303, 53-58, 1992
A;Tille: Differential expression of two sodium channel subtypes
A;Reference number: 829184; MUID:92275082; PMID:1317301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sodium channel protein I - human (fragment) (Species: Homo sapiens (man) (Fragment) (Fragment) (Fraction 30-Sep-193 #sequence_revision 30-Sep-194 Fragment) (Fraction S29184 Fragment) (Fraction S29184 Fragment) (Fraction S29184 Fragment) (Fragment) (Frag
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A; Residues: 1-423 < LUC>
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A;Residues: 8-251,'N' <LU2>
A;Cross-references: EMBL:X65361; NID:g36419; PIDN:CAA46438.1; PID:g36420
C;Superfamily: sodium channel protein
C;Keywords: duplication; sodium channel; transmembrane protein; voltage-ç
F;51-75/Domain: transmembrane #status predicted <TMM>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;Cross-references: UNIPROT:P35498; EMBL:X65362; NID:g36417; PIDN:CAA46439.1; PID:g36410
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R/LU, C.; Han, J.; Rado, T.A.; Brown, G.B.
submitted to the EMBL Data Library, April 1992
A;Reference number: S34777
A;Accession: S34777
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c;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 20-Aug-1999
C;Accession: S29185; S34777
R;Lu, C.M.; Han, J.; Rado, T.A.; Brown, G.B.
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A; Residues: 1-303 < LUC>
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FEBS Lett. 303, 53-58, 1992
A;Tile: Differential expression of two sodium channel subtypes in human brain.
A;Reference number: S29184; MUID:92275082; PMID:1317301
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C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Jun-1988 #sequence_revision 30-Jun-1988 #text_change 09-Jul-2004
C;Accession: B25019; S24804
R;Noda, M.; Ikeda, T.; Kayano, T.; Suzuki, H.; Takeshima, H.; Kurasaki, M.; Takahashi, Nature 320, 188-192, 1986
A;Title: Existence of distinct sodium channel messenger RNAs in rat brain.
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80dium channel protein II - rat
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A;Residues: 611-662 <8CH>
A;Residues: 611-662 <8CH>
A;Cross-references: GB.597388; NID:g248225; PIDN:AAB21984.1; PID:g248226
A;Experimental source: skeletal muscle
A;Experimental source: skeletal muscle at the nucleotide translation
A;Note: sequence extracted from NCBI backbone (NCBIN:97388, NCBID:97391)
C;Superfamily: sodium channel protein
C;Superfamily: sodium channel protein
C;Keywords: duplication; glycoprotein; ion transport; sodium channel; transmembrane |
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A,Residues: i-1983 <JOH>
A,Residues: i-1983 <JOH>
A,Cross-references: UNIPROT:064243

R,Schaller, K.L., Krzemien, D.M.; McKenna, N.M.; Caldwell, J.H.
J. Neurosci. 12, 1370-1381, 1992

A,Title: Alternatively spliced sodium channel transcripts in br.
A,Reference number: A44824; MUID:92211397; PMID:1313493

A,Recession: B44824
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A;Tille: Toxin and kinetic profile of rat brain type III sodium channels expressed in X A;Reference number: A60054; MUID:90251117; PMID:2160038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sodium channel protein IIIb, long form - rat

C;Species: Rattus norvegicus (Norway rat)

C;Date: 03-Mar-1993 #sequence revision 03-Mar-1993 #text_change 09-Jul-2004

C;Accession: A60054, B44824 - revision 03-Mar-1993 #text_change 09-Jul-2004

R;Joho, R.H.; Moorman, J.R.; VanDongen, A.M.T. rivech 0-
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A;Residues: 1-1951 «KAY»
A;Cross-references: UNIPROT:P08104; EMBL:Y00766; NID:g57210; P
A;Note: 270-Ile, 278-Leu, 355-Thr, 513-Lys, and 1059-Arg were
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A;Title: Primary structure of rat brain sodium channel III deduced A;Reference number: S00320; MUID:88137594; PMID:2449363
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sodium channel protein III - rat
C;Species: Rattus norvegicus (Norway ra
C;Date: 30-Jun-1989 #sequence_revision
C;Accession: S00320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
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                                                                                                                                                                                                                                                                                                                         GIFFFVSYIIISFLVVVNMYIAVILENF 1757
                                                                                                                                                                                                                                                                                                                                                         GIFFFVSYIIISFLVVVNMYIAVILENF 28
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Conservative 0;
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100.0%; Pred. No. 3.2e-
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MUID:92211397; PMID:1313493
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Pred. No. 3.2e-20;
0; Mismatches 0;
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on 30-Jun-1989 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
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e also found
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RESULT
S54771
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R;Sarao, R.; Gupta, S.K.; Auld, V.J.; Dunn, R.J.
Ruccleic Acids Res. 19, 5673-6579, 1991
A;Title: Developmentally regulated alternative RNA splicing of A;Reference number: S40782; MUID:92051314; PMID:1658739
A;Accession: S40783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N;Alternate names: sodium channel protein A
C;Species: Rattus norvegicus (Norway rat)
C;Date: 30-Jun-1988 #sequence revision 30-Jun-1988 #text_change 09-Jul-2004
C;Accession: A25019; S40783; T84764
R;Noda, M.; Ikeda, T.; Kayano, T.; Suzuki, H.; Takeshima, H.; Kurasaki, M.;
Nature 320, 188-192, 1986
A;Title: Existence of distinct sodium channel messenger RNAs in rat brain.
A;Reference number: A93377; MUID:86146901; PMID:3754035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Residues: 1-2005 <NOD>
A;Cross-references: UNIPOT:063509
A;Experimental source: brain
R;Sarao, R.; Gupta, S.K.; Auld, V.J.; Dunn, R.J.
submitted to the EMBL Data Library, August 1991
A;Description: Developmentally regulated RNA splicing
A;Reference number: S24803
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                                                                                                                                                                                                                                                                                                     A;Residues: 1-2009 <RES>
A;Cross-references: GB:M22253; NID:g1041088; PIDN:AAA79965.1; PID:g1041089
C;Superfamily: sodium channel protein
                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA
A; Residues: 177-253 <SAR>
A; Residues: 177-253 <SAR>
R; NOda, M.; Numa, S.
J. Recept. Res. 7, 467-497, 1987
J. Recept. Res. 7, 467-497, 1987
A; Title: Structure and function of sodium channel.
A; Reference number: I50536; MUID:87311395; PMID:24-
A; Accession: I84764
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A;Residues: 183-188,'D',190-305 <SAR>
A;Residues: 183-188,'D',190-305 <SAR>
C;Superfamily: sodium channel protein
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Best Local (
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                                                                                        GIFFFVSYIIISFLVVVNMYIAVILENF 1789
                                                                                                                                       GIFFFVSYIIISFLVVVNMYIAVILENF 28
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100.0%; Pred. No. 3.2e-20;
                                                                                                                                                                                                          100.0%; Score 28; DB 2; 100.0%; Pred. No. 3.2e-20;
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EMBO J. 14, 1084-1090, 1995
A;Title: Structure and functional expression of a new member of the tetrodotoxin-sensiti
A;Reference number: S54771; MUID:95237189; PMID:7720699
A;Accession: S54771
A;Accession: S94771
A;Status: preliminary; nucleic acid sequence not shown
A;Status: preliminary; nucleic acid sequence not shown
A;Residues: preliminary; nucleic acid sequence not shown
A;Residues: 1-1977 <KUJU-
A;Cross-references: UNIPROT:015858; EMBL:X82835; NID:g758109; PIDN:CAA58042.1; PID:g7581C;Keywords: duplication
                                                                                                                                                                                                                                  R;Dyer, J.R.; Johnston, W.L.; Castellucci, V.F.; Dunn, R.J. DNA Cell Biol. 16, 347-356, 1997
A;Title: Cloning and tissue distribution of the Aplysia Na-A;Reference number: Z20929; MUID:97238630; PMID:9115644
A;Accession: T30902
                                                                                                                                                                                                                                                                                                                                                C; Date: 22-Oct-1555
C; Accession: T30902
                                                                                                                                                                                                                                                                                                                                                                                   sodium channel SCAP1 alpha chain - California sea hare
C;Species: Aplysia californica (California sea hare)
C;Date: 22-Oct-1999 #sequence_revision 22-Oct-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Superfamily: sodium cl
C; Keywords: duplication
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Proc. Natl. Acad. Sci. U.S.A. 88, 335-339, 1991
Proc. Natl. Acad. Sci. U.S.A. 88, 335-339, 1991
A;Title: Direct amplification of a single dissected chromosomal A;Reference number: 159194; MUID:91110524; PMID:1846440
A;Recession: 159194
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Species: Homo sapiens (man)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change
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c;Speciaes: Homo sapiens (man)
C;Date: 27-Oct-1995 #sequence_revision 03-Nov-1995 #text_change
C;Accession: S54771
R;Klugbauer, N.; Lacinova, L.; Flockerzi, V.; Hofmann, F.
                                                                                                      C; Superfamily:
                                                                                                                           A;Molecule type: mRNA
A;Residues: 1-1993 <DYE>
A;Cross-references: UNIPROT:P90670; EMBL:U66915; NID:g1842248; PID:g1842249; PIDN:AAC474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-70 < RES>
A; Cross-references: GB: M55662; NID: 9179560; PID: 9553206
C; Superfamily: sodium channel protein
                                                                                                                                                                                                       A;Status: preliminary; translated from GB/EMBL/DDBJ
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Matches 24
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Best Local S
Matches 20
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                        Query Match
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                                                                                                   sodium channel protein
60.7%; Score 17; DB 2; llarity 100.0%; Pred. No. 3.7e-Conservative 0; Mismatches
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3.4e-16;
                          3.7e-09;
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                                                Length 1993;
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C;Species: Rattus norvegicus (Norway rat)
C;Date: 26-Uul-1996 #sequence_revision 26-Uul-1996 #text_change
C;Accession: I56555
R;Schaller, K.L.; Krzemien, D.M.; Yarowsky, P.J.; Krueger, B.K.;
J. Neurosci. 15, 3231-3242, 1995
A;Title: A novel, abundant sodium channel expressed in neurons a
A; Accession:
                                                                                                                                                                        RESULT 12
I56555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sodium channel protein pCSC-1 - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 03-Jun-1993 #sequence_revision 03-Jun-1993 #text_change 09-Jul-2004
C;Accession: A45752
R;Sills, M.N.; Xu, Y.C.; Baracchini, E.; Goodman, R.H.; Cooperman, S.S.; Mandel, G.; Chi
J. Clin. Invest. 84, 331-336, 1989
A;Title: Expression of diverse Na(+) channel messenger RNAs in rat myocardium. Evidence
A;Reference number: A45752; MUID:89292178; PMID:2544627
A;Accession: A45752
                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: UNIPROT:063360; GB:M27223; NID:g205611; PIDN:AAA41666.1; PID:g205612
C;Superfamily: sodium channel protein
C;Keywords: duplication
                                                                                                                                                  sodium channel protein 6 -
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A45752
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A;Residues: 1-2005 AHMS
A;Cross-references: GB:M94055
A;Experimental source; brain
A;Note: sequence extracted fro
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C; Superfamily: sodium channel
C; Keywords: duplication
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A46269
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A;Title: Primary structure, chromosomal localization, and functional A;Reference number: A46269; MUID:92390418; PMID:1325650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Species: Homo sapiens (man)
C;Date: 20-Oct-1993 #sequence
C;Accession: A46269
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Best Local (
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Residues: 1-324 <SIL>
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Best Local
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                  I56555;
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100.0%; Pred. No.
tive 0; Mismatc
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              PMID:7751906
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8.7e-07;
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F:132-148/Domain: t
F:138-174/Domain: t
F:225-241/Domain: t
F:249-265/Domain: t
F:376-392/Domain: t
F:376-392/Domain: t
F:702-718/Domain: t
F:731-747/Domain: t
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sodium channel p
C; Species: Rattu
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Riktoplan, A.N.; Sivilotti, L.; Moou, v....
Nature 379, 257-262, 1996
Nature 379, 257-262, 1996
Nature 379, 257-262, 1996
A;Title: A tetrodotoxin-resistant voltage-gated sodium channel expressed by sensory neurons.
A;Reference number: S68453; MUID:96138382; PMID:8538791
                                                                                                                                                                     A;Experimental source: dorsal root ganglia
C;Superfamily: sodium channel protein
C;Keywords: sodium channel; transmembrane protein; voltage-gated
                                                                                                                                                                                                                          A;Molecule type: mRNA
A;Residues: 1-1957 <AKO>
A;Cross-references: UNIPROT:063554; GB:X92184; NID:g1209466;
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R;Dib-Hajj, S.D.; Tyrrell, L.; Black, J.A.; Waxman, S.G. Proc. Natl. Acad. Sci. U.S.A. 95, 8963-8968, 1998
A;Title: NaN, a novel voltage-gated Na channel, is expressed A;Reference number: Z22149; MUID:98338024; PMID:9671787
A;Accession: T42388
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                         C;Species: Rattus norvegicus (Norway rat)
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
C;Accession: 568453
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A;Residues: 1-1765 <DIB>
A;Residues: 1-1765 <DIB>
A;Cross-references: UNIPROT:088457; EMBL:AF059030; NID:g3372614; PID:g3372615; PIDN:AAC4
A;Experimental source: strain Sprague-Dawley; dorsal root ganglia
A;Note: preferentially expressed in sensory neurons within dorsal root ganglia and trige
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A;Molecule type: mRNA
A;Residues: 1-1976 <RES>
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norvegicus (Norway rat)
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Pred. No.
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A;Molecule type: mRNA
A;Residues: 1-1522 <SAT>
A;Residues: 1-1522 <SAT>
A;Residues: 1-1522 <SAT>
A;Cross-references: UNIPROT:Q05973; GB:D14525; NID:g287448; PID:g287449
C;Superfamily: voltage-dependent calcium channel protein alpha-1 chain
C;Keywords: phosphoprotein; sodium channel; transmembrane protein; voltage-r;51-70/Domain: transmembrane #status predicted <TM1>
                                                                                                                                                                                                                                                                                                            Biochem. Biophys. Res. Commun. 186, 61-68, A, Title: Primary structure of squid sodium A, Reference number: JC1101, MUID:92337659; A, Accession: JC1101
F;113-134/Domain: transmembrane #status predicted <TM3>
F;144-167/Domain: transmembrane #status predicted <TM4>
F;180-201/Domain: transmembrane #status predicted <TM5>
F;380-331/Domain: transmembrane #status predicted <TM65>
F;407-426/Domain: transmembrane #status predicted <TM7>
F;443-464/Domain: transmembrane #status predicted <TM8>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            voltage-gated sodium channel homolog - Bdelloura candida C;Species: Bdelloura candida C;Species: Bdelloura candida C;Date: 02-Sep-2000 #sequence_revision 02-Sep-2000 #text_change 09-Jul-2004 C;Accession: T31340 R;Jeziorski, M.C.; Greenberg, R.M.; Anderson, P.A.
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                                                                                                                                            F;78-100/Domain: transmembrane #status predicted <TM2>
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A;Accession: T31340
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A;Residues: 1-1699 <JEZ>
                                                                                                                                                                                                                                                                                                                                                                                                                               Accession: JC1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;Species: Loligo bleekeri (Bleeker's squid)
;Date: 09-Oct-1992 #sequence_revision 09-Oct-1992 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;Status: preliminary; translated from GB/EMBL/DDBJ
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llarity 100.0%;
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                                         A;Status: preliminary; nucleic acid sequence not shown
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R;Anderson, P.A.V.; Holman, M.A.; Greenberg, R.M.
Proc. Natl. Acad. Sci. U.S.A. 90, 7419-7423, 1993
A;Title: Deduced amino acid sequence of a putative sodium channel from the scyphozoan A;Reference number: A48298, MUID:93348284; PMID:8394021
A;Accession: A48298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Molecule type: mRNA
A;Residues: 1-1695 <SPA>
A;Residues: 1-1695 <SPA>
A;Residues: 1-1695 <SPA>
A;Cross-references: UNIPROT:O62604; GB:AF047380; NID:g3005563; PIDN:AAC38974.1; PID:g300'
C;Comment: This protein is the only pore-forming alpha subunit available to account for C;Superfamily: sodium channel protein
C;Keywords: glycoprotein
C;Keywords: glycoprotein
C;Keywords: glycoprotein
C;Keywords: glycoprotein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      voltage-gated sodium channel alpha subunit - hydromedusa (Polyorchis penicillatus)
N;Alternate names: PpSCN 1
C;Species: Polyorchis penicillatus
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F;1010-1032/Domain: transmembrane #status predicted <TM18>
F;1101-1120/Domain: transmembrane #status predicted <TM19>
F;1133-1154/Domain: transmembrane #status predicted <TM20>
F;1163-1184/Domain: transmembrane #status predicted <TM20>
F;1163-11218/Domain: transmembrane #status predicted <TM20>
F;1163-11218/Domain: transmembrane #status predicted <TM22>
F;1137-1258/Domain: transmembrane #status predicted <TM23>
F;1324-1346/Domain: transmembrane #status predicted <TM23>
                                                                                                                                                 sodium channel homolog - jellyfish (Cyanea capillata)
C;Species: Cyanea capillata
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 09-Jul-2004
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816-837/Domain:
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Superfamily: sodium channel protein

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A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: mRNA
A; Molecule type: mRNA
A; Mesidues: 1-1820 < MO2>
A; Cross-references: GB:M2252; NID:gl041048; PIDN:AAA79960.1; PID:gl041049
C; Comment: This membrane glycoprotein mediates the voltage-dependent sodium-ion permeabigs the membrane, the protein forms a sodium-selective channel through which sodium ions C; Comment: This sequence contains four highly homologous internal repeats (excluding research repeat has a similar overall structure containing six subregions located in identifias a net positive charge (S4), and one is neutral (S2).
C; Comment: The four repeating units are thought to be oriented pseudosymmetrically acrose. The presence of four homologous structures within this molecule is consistent with the C; Comment: Available data suggest that activation and inactivation gates are located nea 955 might, in conjunction with the positively charged residues of S4, act as a voltage s C; Superfamily: sodium channel moresin
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Nature 312, 121-127, 1984
A;Title: Primary structure of Electrophorus electricus sodium channel deduc A;Reference number: A03178; MUID:85061498; PMID:6209577
                                                                                                                                                                                                                                                                                                                                                                                                                      A;Molecule type: mRNA
A;Residues: 1-1820 «NOD»
A;Residues: 1-1820 «NOD»
A;Cross-references: UNIPROT:P02719; GB:X01119; NID:g62776; PIDN:CAA25587.1; PID:g62777
R;Noda, M.; Numa, S.
J. Recept. Res. 7, 467-497, 1987
A;Title: Structue and function of sodium channel.
A;Reference number: I50536; MUID:87311395; PMID:2442385
A;Accession: I50536
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()Species: Loligo opalescens (California market squid)
()Date: 11-Jun-2000 #sequence_revision 11-Jun-2000 #text_change 09-Jul-2004
()Accession: T43167
R;Rosenthal, J.J.; Gilly, W.F.
Proc. Natl. Acad. Sci. U.S.A. 90, 10026-10030, 1993
A;Title: Amino acid sequence of a putative sodium channel expressed in the A;Reference number: Z22324; MUID:94052096; PMID:8234251
A;Accession: T43167
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A;Molecule type: mRNA
A;Residues: 1-1794 <ROS>
A;Cross-references: UNIPROT:(25377; EMBL:L19979; NID:g349118; PID:g349119; PIDN:AAA16202
A;Experimental source: stellate ganglia
C;Superfamily: sodium channel protein
C;Keywords: ion transport; membrane protein; sodium channel; voltage-gated ion channel
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Best Local Similarity
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            sodium channel
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100.0%; Pr
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
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         protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            channel deduced from cDNA
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A;Residues: 1-428 <WIL>
A;Cross-references: UNIPROT:Q9TX80
C;Superfamily: sodium channel prot.
C;Keywords: duplication
                                                                                                                                                                                                                                                                                                                         sodium channel protein - house fly
(;Species: Musca domestica (house fly)
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 09-Jul-2004
C;Accession: S35215
C;Alcession: S35215
C;Alcession: S35215
C;Alcession: S35215
Mol. Gen. Genet. 240, 17-22, 193
A;Title: Knockdown resistance (kdr) to DDT and pyrethroid insecticides maps
A;Reference number: S35215; MUID:93341454; PMID:8101963
A;Rocession: S35215
A;Status: preliminary
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-428 cWIL
A;Rocession: S35215 mVIL
A;Rocession: S35215
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S35215
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C;Keywords:
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A;Cross-references: FlyBase:FBgn0002920
C;Superfamily: sodium channel protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Accession: A30302
R;Ramaswami, M.; Tanouye, M.A.
Proc. Natl. Acad. Sci. U.S.A. 86, 2079-2082, 1989
A;Title: Two sodium-channel genes in Drosophila: implications
A;Reference number: A30302; MUID:89184571; PMID:2538830
A;Accession: A30302
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Keywords: duplication; glycoprotein; ion transport; membrane protein; sodium channel; v F;111-419,555-807,989-1281,1311-1587/Region: duplication internal repeats I, II, III and F;111-141,555-585,989-1019,1311-1341/Region: S1 of repeats I through IV F;150-171,597-620,1033-1057,1353-1376/Region: S2 of repeats I through IV F;177-197,626-643,1062-1079,1381-1398/Region: S3 of repeats I through IV F;204-224,651-671,1092-1112,1417-1437/Region: S4 of repeats I through IV F;244-254,651-671,1092-1112,1417-1437/Region: S4 of repeats I through IV F;244-264,691-711,1132-1152,1454-174/Region: S5 of repeats I through IV F;379-402,767-790,1236-1264,1544-1567/Region: S6 of repeats I through IV F;379-402,767-790,1236-1264,1544-1567/Region: S7 of repeats I through IV F;379-402,767-790,1236-1264,1544-1567/Region
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Best Local
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                                                                                                   Local
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10; Conserv
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10, Conserv
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NMYIAVILEN
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                                                                   Conservative
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27
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                                                        35.7%; Score 10;
100.0%; Pred. No.
tive 0; Mismatc
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100.0%; r.
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0.011;
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                                                                Indels
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165 NMYIAVILEN

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RESULT 25
S72458
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A;Variety: strain CSMA
C;Datie: 29-Vul-1997 #sequence_revision 29-Aug-1997 #text_change 09-Jul-2004
C;Accession: S72467; S72487
R;Miyazaki, M.; Ohyama, K.; Dunlap, D.Y.; Matsumura, F.
  C;Species: Musca domesti
A;Variety: strain Cooper
C;Date: 24-Oct-1998 #seq
                                           sodium channel protein para-type alpha chain -
C;Species: Musca domestica (house fly)
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A;Title: Molecular analysis of the para locus, a sodium channel A;Reference number: A33299; MUID:89376565; PMID:2550145
A;Accession: A33299
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A; Residues: 711-819 < MIW>
A; Cross-references: EMBL: U71083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Molecule type: mRNA
A;Residues: 1-1689 <mil>
A;Residues: 1-1689 <mil>
A;Cross-references: UNIPROT:Q93135; EMBL:U71083; NID:g1633647; PIDN:AAB82037.1; PID:g1
R;Miyazaki, M.; Ohyama, K.; Dunlap, D.Y.; Matsumura, F.
Mol. Gen. Genet. 252, 61-68, 1996
A;Title: Cloning and sequencing of the para-type sodium channel gene from susceptible
A;Reference number: S72487; MUID:96397510; PMID:8804404
                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: FlyBase:FBgn0003036
C;Superfamily: sodium channel protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sodium channel protein - fruit fly (Drosophila melanogaster) (fragment)
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C;Species: Blattella germanica (German cockroach)
                                                                                                                                                                                                                                                                                                                                                                                                                               A;Gene: FlyBase:para
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A;Cross-references: GB:M32078; GB:M24285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     , Molecule type: mRNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Species: Drosophila melanogaster
Date: 20-Dec-1989 #sequence_revision 20-Dec-1989 #text_change 21-Nov-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Superfamily: sodium channel protein; Keywords: duplication; sodium channel; transmembrane protein;
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Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                   Query Match
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                                                                                                                                                                                                                                                                                              Local Similarity
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                                                                                                                                                                                                                                                                         10;
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#sequence_revision 24-Oct-1998 #text_change 09-Jul-2004
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                                                                                                                                                                                                                                                                                            35.7%; Score 10; 100.0%; Pred. No.
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                                                                                                                                                                                                                                                                                         DB 2;
0.038;
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0.035;
                                                                     house fly (strain Cooper)
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                                                                                                                                                                                                                                                                                                              Length 1820;
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A;Molecule type: mRNA
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A;Residues: 1-2108 <MIL>
C;Genetics: 1-2108 <MIL-1-2108 <MIL-1-
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R;Williamson, M.S.; Martinez-Torres, D.; Hick, C.A.; Devonshire, A.L.
MOI. Genet. 252, 51-60, 1996
MOI. Genet. Genet. 252, 51-60, 1996
A;Title: Identification of mutations in the housefly para-type sodium channel gene assoc A;Reference number: S72458; MUID:96397509; PMID:8804403
A;Accession: S72458
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                                                                                                                                                                                                                                                        Matches
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GenCore version 5.1.6 (c) 1993 - 2005 Compugen Ltd
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CIN1_RAT
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8 mus musculu
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7 rattus norv
                                       homo sapien
pongo pygma
gorilla gor
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Q6HCZ6
Q8HL64
AAT33890
Q8H8L9
Q90519
Q9DF53
Q9DF53
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Q17314
Q25377
CINA_ELEEL
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AAS68827
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Q9ER60
Q9PE09
Q96YL8
Q7ZVG1
Q7ZVG1
                                                                                                                                                                                                                  CINA DROME
Q86D77
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Q6DLT3
Q86M38
Q86M38
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Q8NDX3
Q9UHE0
Q9UI33
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Q8F303
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PTMA_BUCBP
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RESULT 1

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RPASDUENCE FROM N.A.

STRAIN-C57BL/6J; TISSUE=Olfactory brain;

RA Adachi J., Aizawa K., Akimura T., Arakawa T., Bono H., Carminci P.,

RA Fukuda S., Furuno M., Hanagaki T., Hara A., Hashizume W.,

RA Hayashida K., Hayatsu N., Hiramoto K., Hiraoka T., Hirozane T.,

RA Hori F., Imotani K., Ishii Y., Itoh M., Kagawa I., Kasukawa T.,

RA Katoh H., Kawai J., Kojima Y., Kondo S., Konno H., Kouda M., Koya S.,

RA Kurihara C., Matsuyama T., Miyazaki A., Murata M., Nakamura M.,

RA Nishi K., Nomura K., Numazaki R., Ohno M., Ohazaki Y.,

RA Saito R., Saitoh H., Sakai C., Sakai K., Sakazume N., Sano H.,

RA Saito R., Saitoh H., Sakai C., Sakai K., Sakazume N., Sano H.,

Caraki D., Shibata K., Shinagawa A., Shiraki T., Sogabe Y., Tagami M.
                                                                                                                                                                                                                                                                                                                                                                                                       C STRAIR-C57BL/6J; TISSUE-Olfactory brain;

IX MEDLINE-20530913; PubMed=11076861;

A Shibata K., Itoh M., Alzawa K., Nagaoka S., Sasaki N., Carninci P.,

A Konno H., Akiyama J., Nishi K., Kitsunai T., Tashiro H., Itoh M.,

A Sumi N., Ishii Y., Nakamura S., Hazama M., Nishine T., Harada A.,

A Yamamoto R., Matsumoto H., Sakaguchi S., Ikegami T., Kashiwagi K.,

A Yoneda Y., Ishikawa T., Ozawa Y., Izawa M., Ohara E., Watahiki M.,

RA Yoneda Y., Ishikawa T., Ozawa K., Tanaka T., Matsuura S., Kawai J.,

RA Okazaki Y., Muramatsu M., Inoue Y., Kira A., Hayashizaki Y.;

"RIKEN integrated sequence analysis (RISA) system-384-format

RT sequencing pipeline with 384 multicapillary sequencer.";

RL. Genome Res. 10:1757-1771(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.

STRAIN=C57BL/6J; TISSUE=Olfactory brain;
MEDLINE=20499374; PubMed=11042159;
Carninci P., Shibata Y., Hayatsu N., Sugahara Y., Shiba:
Konno H., Okazaki Y., Muramatsu M., Hayashizaki Y.;
"Normalization and subtraction of cap-trapper-selected prepare full-length cDNA libraries for rapid discovery Genome Res. 10:1617-1630(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Name-230052k1>...
Name-340052k1>...
Mus musculus (Mouse).
Mus musculus (Mouse).
Mus musculus (Mouse).
Mousely (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the RIKEN Genome Exploration Research "Analysis of the mouse transcriptome 60,770 full-length cDNAs.";
Nature 420:563-573(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.

STRAIN=C57BL/6J; TISSUE=Olfactory |

MEDLINE=99279253; PubMed=10349636;

Carninci p., Hayashizaki Y.,

"High-efficiency full-length cDNA weth. Enzymol. 303:19-44(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
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STRAIN=C57BL/6J; TISSUE=Olfactory brain;
The FANTOM Consortium,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RIKEN FANTOM Consortium; "Functional annotation of a Nature 409:685-690(2001).
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STRAIN-C57BL/60; TISSUE-Olfactory
MEDLINE-21085660; PubMed-11217851;
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01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
musculus adult male olfactory brain cDNA, RIKEN full-length
enriched library, clone:6430408L10 product:sodium channel protein
homolog (Fragment).
Name=A230052E19Rik;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q8CCS4
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Sciurognathi; Muridae; Murinae; Mus
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GO; GO:001518; C:voltage-gated sodium channel col
GO; GO:0005248; F:cation channel activity; IEA.
GO; GO:0005248; F:voltage-gated sodium channel ac
GO; GO:0005249; F:voltage-gated sodium channel ac
GO; GO:0006812; P:cation transport; IEA.
GO; GO:0006814; P:sodium ion transport; IEA.
InterPro; IPR010182; Cat/Na pore.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005821; Ion_trans.
InterPro; IPR00196; IQ region.
InterPro; IPR00196; Na_channel.
InterPro; IPR00196; Na_channel.
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Matches 28
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InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR0020111; Ion_trans.
InterPro; IPR000048; IQ region.
InterPro; IPR001820; M-channel nlg.
InterPro; IPR001820; M-channel nlg.
InterPro; IPR001820; M-channel nlg.
InterPro; IPR001820; Na_channel.
Pfam; PF00520; Ion_trans; 1.
Pfam; PF00520; Ion_trans; 1.
PRINTS; PR00170; NACHANNEL.
SMART; SM00015; IQ; 1.
PROSITS; PS50096; IQ; 1.
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01-NOV-1996 (Tri
01-MAR-2004 (Tri
Sodium channel
        InterPro; IPR001696; Na ch
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Pfam; PF00612; IQ; 1,
                                                                                                                                                                                                      Jover E.,
Submitted
                                                                                                                                                                                                                            TISSUE=Brain;
                                                                                                                                                                                                                                                                        Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                       SEQUENCE FROM
                                                                                                                                                                                                                                                                                              Mus musculus
                                                                                                                                                                                                                                                                                                                                                       Q62242;
                                                                                                                                                                                                                                                                                                                                                                  Q62242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Transport; Voltage-gated channel.
NON TER 1 1 1
SEQUENCE 404 AA; 45671 MW; C5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fon transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tagawa A., Takahashi F., Takaku-Akahira S., Takeda Y., Tanaka T
Tomaru A., Toya T., Yasunishi A., Muramatsu M., Hayashizaki Y.,
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                                                         mitted (JUN-1995) to the EMBL/GenBank/DDBJ
SUBCELLULAR LOCATION: Integral membrane positions of the sodium channel
                                                                                                                                                                                                                                                                                                                                                                                                                        151
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity
28; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                   GIFFFVSYIIISFLVVVNMYIAVILENF 178
                                                                                                                                                                                                                                                                                                                                                                                                                                  GIFFFVSYIIISFLVVVNMYIAVILENF 28
                                                                                                                                                                                                                                                                       Eutheria;
                                                                                                                                                                                                                 Shah V.;
                                                                                                                                                                                                                                                                                                                 (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                           (Mouse)
                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                      N.A.
                                                                                                                                                                                                                                                                                                       (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96; IQ; 1.
Ionic channel;
NACHANNEL
                                                                                                                                                                                                                                                                      Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              45671 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                `26,
                                                                                                                                                                         EMBL/GenBank/DDBJ databases ntegral membrane protein (By the sodium channel family.
                                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                       Created)
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                                                                                                                                                                                                                                                                    Craniata; Vertebrata;
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
Pred.
                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sodium channel; Transmembrane;
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No.
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                                                                                                                                         complex;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       activity; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64;
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                                                                                                                                                                                                                                                                 Euteleostomi;
; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (By similarity).
                                                                                                                                         IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     404;
                                                                                                                                                                                    similarity).
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Best Local S
Matches 28
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GO; GO:00016021; C:integral to membrane; I
GO; GO:000151B; C:voltage-gated sodium ch
GO; GO:0005281; F:cation channel activity
GO; GO:0005281; F:voltage-gated sodium ch
GO; GO:000524B; F:voltage-gated sodium ch
GO; GO:0006812; P:cation transport; IEA.
GO; GO:0006814; P:sodium ion transport; I
InterPro; IPR001602; CalNa pore.
InterPro; IPR002111; Cat_channel_TrpL.
InterPro; IPR002811; IOn_trans.
InterPro; IPR005820; M+channel_nlg.
InterPro; IPR001696; Na_channel_nlg.
InterPro; IPR001696; Na_channel_nlg.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9F2J1;
01-OCT-2000
01-OCT-2000
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PROSITE; PS50095; IQ; 1.
ION transport; Ionic channel; Soc
Transport; Voltage-gated channel
NON_TER 510 510
                                                                                                                                                                                                                            Transport;
                                                                                                                                                                                                                                                                      PROSITE: PS50096; IQ; 1.
Ion transport; Ionic channel; Sodium
                                                                                                                                                                                                                                                                                                                          PRINTS; PR00170; NACHANNEL. SMART; SM00015; IQ; 1.
                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00520; Ion_trans; 1. Pfam; PF00612; IQ; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-20181126; PubMed-10718198;
Nagase T., Kikuno R., Ishikawa K., Hirosawa M., Ohara O.;
"Prediction of the coding sequences of unidentified human
The complete sequences of 150 new cDNA clones from brain w
for large proteins in vitro.";
DNA Res. 7:65-73(2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KIAA1356 protein
Name=KIAA1356;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-OCT-2000 (TrEMBLrel. 15,
01-OCT-2000 (TrEMBLrel. 15,
01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9P2J1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION: Integral membrane protein (By simi SIMILARITY: Belongs to the sodium channel family. II; AB037777; BAA92594.1; -. GO:0016021; C:integral to membrane; IEA. GO:0001518; C:voltage-gated sodium channel complex; IEA. GO:0005261; F:cation channel activity; IEA. GO:0005248; F:voltage-gated sodium channel activity; IEA. GO:0005812; P:cation transport; IEA. GO:0006814; P:sodium ion transport; IEA. GO:0006814; P:sodium ion transport; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304
  266
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                               GIFFFVSYIIISFLVVVNMYIAVILENF 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GIFFFVSYIIISFLVVVNMYIAVILENF 28
  GIFFFVSYIIISFLVVVNMYIAVILENF 293
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                                                                                                                                                                                               519
                                                                                                                                                                                                                                              Voltage-gated channel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     510 AA;
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                                                                                         100.0%; So
100.0%; P:
ative 0;
                                                                                                                                                                                                    58982 MW;
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Last annotation update)
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Pred. No. 2.4
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Pred. No.
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                                                                                                                                                                                                                                                                              channel; Transmembrane;
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                                                                                                                                                DB 2;
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                                                                                                 s 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  activity; IEA
                                                                                                                                             Length 519;
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RESULT

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InterPro; IPR001682; Ca/Na pore.
InterPro; IPR002111; Cat_channel_TrpL.
InterPro; IPR005821; Ion_trans.
InterPro; IPR000488; IQ region.
InterPro; IPR0005820; M+Channel nlg.
InterPro; IPR001696; Na_trans_assoc.
InterPro; IPR010526; Na_trans_assoc.
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                                                                                          PROSITE; PS50096; IQ; FALSE_NEG.
3D-structure; Glycoprotein; Ion transport; Ionic channel;
Multigene family; Repeat; Sodium channel; Transmembrane;
                                                                                                                        Pfam; PF00520; Ion trans; 4.
Pfam; PF00612; IQ; 1.
Pfam; PF06512; Na trans assoc; 1.
PRINTS; PR00170; NACHANNEL.
                                                                                                                                                                                                                                        EMBL; Y00766; CAA68735.1;
PIR; S00320; S00320.
PDB; 1QG9; NMR; A=156-176.
RGD; 3635; SCn3a.
                                                                                                                                                                                                                                                                                                        use by non-profit institutions as long as modified and this statement is not removed. I entities requires a license agreement (See htt
                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a c
between the Swiss Institute of Bioinformatics and the EMBL
the European Bioinformatics Institute. There are no restrict
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEBS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sodium channel protein type III alpha subunit (Voltage channel alpha subunit Navl.3) (Sodium channel protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-AUG-1988 (Rel. 08, Created)
01-AUG-1988 (Rel. 08, Last sequence update)
01-OCT-2004 (Rel. 45, Last annotation update)
                                                                                                                                                                                                                                                                                              or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=88137594; PubMed=2449363;
Kayano T., Noda M., Flockerzi V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Name=Scn3a;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            subunit) (Voltage-gated sodium channel subtype III).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=Wistar;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Primary structure of rat brain sodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence.";
Lett. 228:1
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                                                                                   channel
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 III.
III.
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RESULT
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Best Local S
Matches 28
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Q9C007;
01-JUN-2001 (TremBLrel. 17, C
01-JUN-2001 (TremBLrel. 17, L
01-JUN-2004 (TremBLrel. 26, L
                          HSSP;
GO; GO
GO; GO
GO; GO
GO; GO
                                                                                                                                                         Jeong S.-Y., Goto J., Kanazawa I.;
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELULUAR LOCATION: Integral membrane protein (By
-!- SIMILARITY: Belongs to the sodium channel family.
EMBL; AF225986; AAK
                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. Jeong S.-Y., Goto
                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human)
Eukaryota; Metazoa;
Mammalia; Eutheria;
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CARBOHYD
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PF, P04775, iBYY.

GO:0016021; C:integral to membrane; IEA.
GO:0001518; C:voltage-gated sodium channel
GO:0005261; F:cation channel activity; IEA.
GO:0005248; F:voltage-gated sodium channel
GO:0005248; F:voltage-gated sodium channel
GO:0006814; F:sodium ion transport; IEA.
GO:0006814; F:sodium ion transport; IEA.
GO:0006814; F:sodium ion transport; IEA.
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Last sequence update)

Last annotation update)

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Catarrhini;
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Pred. No.
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REMEL; ABO98335; BAC45228.1; -.

RISSP; P04775; 1BYY.

GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0001818; C:voltage-gated sodium channel con
R GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:0005248; F:voltage-gated sodium channel act
GO; GO:0006844; F:voltage-gated sodium channel act
GO; GO:0006814; P:voltage-gated sodium channel act
R GO; GO:0006814; F:voltage-gated sodium channel act
GO; GO:0006814; F:voltage-gated sodium channel act
R GO; GO:0006814; F:voltage-gated sodium channel act
R GO; GO:0006814; F:voltage-gated sodium channel act
R GO; GO:0006814; F:voltage-gated sodium channel TEA.
R InterPro; IPR001682; Ca/Na_pore.
R InterPro; IPR001681; IOn_trans.
R InterPro; IPR000048; IO_Tegion.
R InterPro; IPR000048; IO_Tegion.
R InterPro; IPR0001696; Na_channel I.
R InterPro; IPR0001696; Na_channel I.
R InterPro; IPR0000521; Na_channel I.
R InterPro; IPR0000526; Na_trans_assoc.
R InterPro; IPR000100; RiDonuclease_P.
R Pfam; PF00520; Ion_trans: 4.
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Best Local S
Matches 28
                                                                                                                      Pfam; PF00520; IO, Trans; 4.
Pfam; PF00612; IQ; 1.
Pfam; PF06512; Na trans assoc; 1
PRINTS; PR00170; NACHANNEL.
PRINTS; PR01664; NACHANNEL1.
SMART; SW00015; IQ; 1.
PROSITE; PS00648; RIBONUCLEASE P
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InterPro; IPR005821; Ion_trans.
InterPro; IPR000582; IQ region.
InterPro; IPR0005820; M+Channel_nlg.
InterPro; IPR001656; Na_channel_nlg.
InterPro; IPR016526; Na_trans_assoc.
Pfam; PF00520; Ion_trans; 4.
Pfam; PF00520; Ion_trans; 4.
Pfam; PF00612; IQ; 1.
Pfam; PF06512; Na_trans_assoc; 1.
PRINTS; PR00170; NACHANNEL.
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Q8IUJ6;
01-MAR-2003
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SMART; SM00015; IQ;
PROSITE; PS50096; I
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Eukaryota; Metazoa;
Mammalia; Eutheria;
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Ion transport; Voltage-gated channel.

Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propressor | Propr
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SITE; PS00648; RIBONUCLEASE P; UNKNOWN 1.
transport; Ionic channel; Sodium channel; Transmembrane;
nsport; Voltage-gated channel.
UENCE 1981 AA; 226201 MW; B1D6946D6491B7AD CRC64;
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(TrEMBLrel. 23, Last sequ
(TrEMBLrel. 26, Last anno
ed sodium channel alpha 1
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Pred. No. 6.5
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ium channel family
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                                                                                                                                                                                                                                                                                                                                            Lu C.M., Brown G.B.;
"Isolation of a human-brain sodium-channel of the subtype III alpha-subunit.";
J. Mol. Neurosci. 10:67-70(1998).
[5]
                                                   Tonkovich G.S., Kyle J.W.
"Endogenous sodium currer
expression of endogenous
subunit.";
                                                                                                                                                                                                                                                                     MEDLINE=94211784; PubMed=8159690;
Malo M.S., Srivastava K., Andrese
                                                                                                                                                                                                                                                                                                          SEQUENCE OF 1324-1413
TISSUE=Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Brain;
MEDLINE=98251277; PubMed=9589372;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 1-1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Genomic structures of SCN2A and at the DFNA16 locus.";
Gene 264:113-122(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. (ISOFORMS 1: 2: 3 AND 4), AND VARIANT THR-606.
MEDLINE=21142400; PubMed=11245985; DOI=10.1016/S0378-1119(00)00594-1;
Kasai N., Fukushima K., Ueki Y., Prasad S., Nosakowski J.,
Sugata K.-I., Sugata A., Nishizaki K., Meyer N.C., Smith R.J.H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted
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28-FEB-2003 (Rel. 41, Last sequence update)
28-FCB-2004 (Rel. 45, Last annotation update)
01-CCT-2004 (Rel. 45, Last annotation update)
Sodium channel protein type III alpha subunit
channel alpha subunit Nav1.3) (Sodium channel
subunit) (Voltage-gated sodium channel subtype
Name=SCN3A; Synonyms=NAC3;
                                     Submitted (FEB-2000) to the
                                                                                                                                                                                                 assignment of a putative chromosome 2q24-31.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (ISOFORM 3).
                                                                                                                            SEQUENCE OF 16
TISSUE=Kidney;
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                                                                                                                                                                                                                                    Targeted gene walking
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entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 response to the voltage unitary channel through which protein forms a sodium-selective channel through which protein forms a sodium-selective electrochemical gradient.

may pass in accordance with their electrochemical gradient.

SUBUNIT: The sodium channel consists of a large polypeptide and a smaller ones. This sequence represents a large polypeptide.

SUBCELLULAR LOCATION: Integral membrane protein.

ALTERNATIVE PRODUCTS:

Event-Alternative splicing; Named isoforms=4;

Event-Alternative splicing and 6N only differ by a single residue;
                                                                                                                                                                                                                                                          Name=3; Synonyms=6N-12+12b;
IGDId=QNNY46-3; Sequence=VSP_001033;
Name=4; Synonyms=6N-12;
IsoId=Q9NY46-4; Sequence=VSP_001033, VSP_001034;
DOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1,52,53,55,56) and one positively charged segment (S4). Segments S4 are probably the voltage-sensors and archaracterized by a series of positively charged amino acids at every third position.

SIMILARITY: Belongs to the sodium channel family.

SIMILARITY: Contains 1 IQ domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Comment=Exons 6A and 6N only differ Name=1; Synonyms=6A-12+12b;
IsoId=9NY46-1; Sequence=Displayed;
Name=2; Synonyms=6A-12;
IsoId=09NY46-2; Sequence=VSP 001034;
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GO; GO:0006814; P:sodium ion transport; l

R InterPro; IPR001682; CayNa pore;

InterPro; IPR005111; Cat_channel_TrpL.

InterPro; IPR005821; Ion_trans.

InterPro; IPR005821; Ion_trans.

InterPro; IPR005820; M+Channel_nlg.

InterPro; IPR005820; M+Channel_nlg.

InterPro; IPR01696; Na_channel.

InterPro; IPR01696; Na_trans_assoc.

Pfam; PF06520; Ion_trans; 4.

Pfam; PF06512; Na_trans_assoc; 1.

PROSITE; PS50096; IQ; I]

PROSITE; PS50096; IQ; I]

Alternative splicing; Glycoprotein; Ion_twiltigene family; Polymorphism; Repeat; S

Voltage-gated channel.

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RESULT 8

CIN2 HUMAN

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ID CIN2 HUMAN

AC Q99250; Q14472; Q9BZC9; Q9BZD0;
DT 01-JUN-1994 (Rel. 29, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Sodium Channel protein type II alpha subunit (Vo Be channel alpha subunit Nav1.2) (Sodium Channel property)

BE Subunit) (HBSC II).
RESIDENCE OF 1702-1772 FROM N.A.

RX SEQUENCE OF 1702-1772 FROM N.A.

RX MEDLINE=91110524; PubMed=1846440;
RA Han J., Lu C.-M., Brown G.B., Rado T.A.;
RT "Direct amplification of a single dissected chromosomal segment by RT chromosome 2q22-q23.";
RT polymerase chain reaction: a human brain sodium channel gene is on Proce Natl. Acad. Sci. U.S.A. 88:335-339(1991).
CC -: FUNCTION: Mediates the voltage-dependent sodium ion permeability of excitable membranes. Assuming opened or closed conformations in CC response to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) ions CC may pass in accordance with their electrochemical gradient.
CC -: SUBUNIT: The sodium channel consists of a large polypeptide and 2-CC smaller local integral membrane protein.
CC 3 smaller ones. This sequence represents a large polypeptide.
CC -: SUBCELLUIAR LOCATION: Integral membrane protein.
CC ISUBCELLUIAR LOCATION: Sequence [Separate Protein].
CC ISUBCELLUIAR LOCATION: Sequence [Separate Protein].
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CC ISUBCELLUIAR LOCATION: Sequence [Separate Protein].
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CC ISUBCELLUIAR LOCATION: Integral membrane protein.
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FEBS Lett.
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Lu C.-M., Eichelberger J.S., Beckman M.L., Schade S.D.,
"Isolation of the 5'-flanking region for human brain soc
subtype II alpha-Subunit (SCN2A).";
Submitted (APR-1998) to the EMBL/GenBank/DDBJ databases.
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MEDLINE=21142400; PubMed=11245985; DOI=10.1016/S0378-1119(00)00594-1;

Kasai N., Fukushima K., Ueki Y., Prasad S., Nosakowski J.,

Sugata K.-I., Sugata A., Nishizaki K., Meyer N.C., Smith R.J.H.;

"Genomic structures of SCN2A and SCN3A - candidate genes for deafness
at the DFNA16 locus.";

Gene 264:113-122(2001).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIINE=92390418; PubMed=1325650;
Ahmed C.M., Ware D.H., Lee S.C., Patten C.D., Fe
Schinder A.F., McPherson J.D., Wagner-Mcpherson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Evans G.A., Montal M.;
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channel subtypes
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R EMBL, M94055, AAA16895.1;

R EMBL AP327246, AAG53413.1;

R EMBL AP327226, AAG53413.1;

R EMBL AP327226, AAG53413.1;

R EMBL AP327228, AAG53413.1;

R EMBL AP327229, AAG53413.1;

R EMBL AP327229, AAG53413.1;

R EMBL AP327231, AAG53413.1;

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R EMBL AP327239, AAG53413.1;

R EMBL AP327240, AAG53413.1;

R EMBL AP327241, AAG53413.1;

R EMBL AP327249, AAG53413.1;

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R EMBL AP327229, AAG53412.1;

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AC P04775;
DT 13-AUG-1987
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                                                                                           CONFLICT
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Alternative splicing; Glycoprotein;
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Similarity 100.
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channel; Transmembrane;
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(Rel. 05, Created)

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2005

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SEQUENCE FROM N.A.
MEDLINE-86146901; PubMed-3754035;
NOda M., Ikeda T., Kayano T., Suzuki H.,
Noda M., Numa S.;

Rattus norvegicus (Rat). Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;

Craniata; Vertebrata; | Sciurognathi; Muridae;

Euteleostomi;
; Murinae; Rattus.

NCBI_TaxID=10116;

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RA Noda M., Ikeda T., Kayano T., Suzuki H., Takeshima H., Kurasaki M.,
RA Takahashi H., Numa S.;
RT "Existence of distinct sodium channel messenger RNAs in rat brain.";
CC -i-FUNCTION: Mediates the voltage-dependent sodium ion permeability
CC of excitable membranes. Assuming opened or closed conformations in
CC response to the voltage difference across the membrane, the
CC may pass in accordance with their electrochemical gradient.
CC may pass in accordance with their electrochemical gradient.
CC subcutility. The sodium channel consists of a large polypeptide and 2-
1-SUBLNIT: The sequence contains 4 internal repeats, each with 5
CC subciliurak LOCATION: Integral membrane protein.
CC hydrophobic segments (S1.S2.S3,S5,S6) and one positively charged
CC characterized by a series of positively charged amino acids at
CC -i-SUMILARITY: Contains 1 IQ domain.
CC -i-SIMILARITY: Contains 1 IQ domain.
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01-OCT-2004 (Rel. 45, Last annotation update)
Sodium channel protein type II alpha subunit (Voltage-gated sodium channel alpha subunit Nav1.2) (Sodium channel protein, brain II alpha
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A Hirota K., Kaneko Y., Matsumoto G., Hanyu Y.;

C -!- SIMDELLULAR LOCATION: Integral membrane protein (By sim:

RHEL, F123593, AAD17315.1;

RGO; GO:0015021; C:Integral to membrane; IEA.

RGO; GO:0015021; C:Integral to membrane; IEA.

RGO; GO:0005261; F:cation channel activity; IEA.

RGO; GO:0005261; F:cation channel activity; IEA.

RGO; GO:0005261; F:cation channel activity; IEA.

RGO; GO:0005261; F:cation transport; IEA.

RGO; GO:000521; F:cation transport; IEA.

RINTERPO; IPRO01682; Ca/Na Dore.

RINTERPO; IPRO01682; IOn trans.

DR InterPro; IPRO00248; IOn trans.

DR InterPro; IPRO0048; IOn trans.
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Q9YGN7;
PRELIMINARY;
PRT; 2007 AA.
01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
Voltage-dependent sodium channel.
Voltage-dependent sodium channel.
Cynops pyrrhogaster (Japanese common newt).
Amphibia; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Salamandridae; Cynops.
NCBI_TaxID=8330;
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EMBL; X03639; CAA272871;

PDB; 1BYY; NMR; A=14/4-1526.

InterPro; IPR001682; Ca/Na pore.
InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR005821; Ion_trans.
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InterPro; IPR005820; M-channel nlg.
InterPro; IPR001696; Na_channel nlg.
InterPro; IPR001696; Na_channel.
Pfam; PF00520; Ion_trans; 4.
Pfam; PF00611; IQ; 1.
PF108175; PR00170; NaCHANNEL.
PROSITE; PS50096; IQ; 1.
PROSITE; PS50096; IQ; 1.
PROSITE; PS50096; IQ; 1. REPEAT REPEAT REPEAT REPEAT TRANSMEM 3D-structure, Glycoprotein, Multigene family, Repeat, S This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions modified and this statement is not removed. Usage by and for content is in corrections entities requires a license agreement (See http://www.isb-sib.ch/anor send an email to license@isb-sib.ch). channe 1504 1504 1811 1811 148 176 208 234 274 427 778 813 841 867 Sodium \$1 \$2 \$3 \$4 \$5 \$6 \$1 \$2 \$3 \$3 Ion transport; Ionic channel;
m channel; Transmembrane; repeat repeat repeat repeat repeat repeat repeat repeat repeat Нанананан

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Pfam; PF00512; IQ 1.

Pfam; PF06512; Na trans assoc; 1.

Pfam; PF06512; Na trans assoc; 1.

PRINTS; PR00170; NACHANNEL.

SMART; SM00015; IQ; 1.

SMART; SM00015; IQ; 1.

Transport; Ionic channel; Sodium ch
Transport; Voltage-gated channel.

Transport; Voltage-gated channel.
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16-OCT-2001 (Rel. 40, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
Sodium channel protein type I alpha subunit (Voltage-gated sodium channel alpha subunit Navl.1) (Sodium channel protein, brain I alpha
SEQUENCE
                   MEDIINE-94340991; PubMed-8062593;
MAIO M.S., Blanchard B.J., Andresen
MAIO M.S., Usanchard B.J., Andresen
MAIO M.S., Warenberg J.R., In
"Localization of a putative human br
chromosome band 2q24.";
Cytogenet. Cell Genet. 67:178-186(19
                                                                                                                                                                          Submitted
                                                                                                                                                                                                        TISSUE=Brain;
Sugawara T., Mazaki E.M.,
                                                                                                                                                                                                                                                                                                    SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                     Escayg A., MacDonald B.T., Meisler M.H., An-Gourfinkel I., Brice A., LeGuern E.,
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IPR010526; Na_trans_assoc.
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for human voltage-gated sodium channel alpha subunit,
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MEDLINE=2115274; PubMed=11254444;
Wallace R.H., Scheffer I.E., Barnett S., Richards M., I
Wallace R.R., Lerman-Sagie T., Lev D., Mazarib A., Brand
Desai R.R., Lerman-Sagie T., Lev D., Mazarib A., Brand
Ben-Zeev B., Golkhman I., Singh R., Kremmidiotis G., Gs
Sutherland G.R., George A.L. Jr., Mulley J.C., Berkovic
"Neuronal sodium-channel alphal-subunit mutations in ge
Pilepsy with febrile seizures plus.";
pan. J. Hum. Genet. 68:859-865(2001).
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                                                                                                                                                                                                                                                                                                                                                                                                                                 Neurology 57:2265-2272 (2001).

-|- FUNCTION: Mediates the voltage-dependent sodium ion permeabi of excitable membranes. Assuming opened or closed conformative personnes to the voltage difference across the membrane, the protein forms a sodium-selective channel through which Na(+) may pass in accordance with their electrochemical gradient.
-|- SUBUNIT: The sodium channel consists of a large polypeptide a smaller ones. This sequence represents a large polypeptide (-) SUBCELLULAR LOCATION: Integral membrane protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Abou-Khalil B., Ge Q., Desai R., Ryther R., Haines J.L., Sutcliffe J.S., George A.L. Jr "Partial and generalized epilepsy with febr: novel SCNIA mutation.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   myoclonic epilepsy Am. J. Hum. Genet.
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ESCAYG A., Hells A., MacDonald B.T., Haug K., Sander T.,

"A novel SCNIA mutaction associated with generalized epile

febrile seizures plus -- and prevalence of variants in pa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=21257503; PubMed=11359211; Claes L., Del-Favero J., Ceulemans
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Lu C.-M., Han J., Rado T.A., Brown
"Differential expression of two sod
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     is observed.

DISEASE: Defects in SCNIA are a cause of severe myoclonic epile in infancy (SMEI) [MIM:607208], a severe form of generalized epilepsy with febrile seizures. SMEI is a rare disorder characterized by normal development before onset, seizures beginning in the first year of life in the form of generalized unilateral febrile clonic seizures, secondary appearance of unilateral febrile clonic seizures, secondary appearance of the services are considered to the first year.
                                                                                                                                    every third position.

DISEASE: Defects in SCNIA are the cause of generalized e with febrile seizures plus type 2 (GBFS+2) [MIM:604233]. autosomal dominant disorder is characterized by febrile in children and afebrile seizures in adults. Penetrance incomplete and a large intrafamilial variability of the
                                                                                                                                                                                                                                                   DOMAIN: The sequence contains 4 internal repeats, each with 5 hydrophobic segments (S1,S2,S3,S5,S6) and one positively charged segment (S4). Segments 94 are probably the voltage-sensors and a characterized by a series of positively charged amino acids at
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of infancy.";
68:1327-1332(2001).
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DR MIM; 607203; -.

DR GO; GO:0016021; C:integral to membrane; NAS.

DR GO; GO:0005248; F:voltage-gated sodium channel activity; NAS.

DR GO; GO:0005248; F:voltage-gated sodium channel activity; NAS.

DR GO; GO:0005244; F:sodium ion transport; NAS.

DR InterPro; IPR001682; Ca/Na_pore.

DR InterPro; IPR005821; Ion_trans.

DR InterPro; IPR005821; Ion_trans.

DR InterPro; IPR005820; M+channel nlg.

DR InterPro; IPR001696; Na_channel1.

DR InterPro; IPR001696; Na_channel1.

DR InterPro; IPR001526; Na_trans_assoc.

DR Ffam; PF00512; Ion_trans; 4.

DR Pfam; PF00512; Na_trans_assoc; 1.

DR Pfam; PF00512; Na_trans_assoc; 1.

DR Pfam; PF00512; Na_trans_assoc; 1.

DR Pfam; PF006512; Na_trans_assoc; 1.

DR PF1075; PR01664; NACHANNELL.

DR PRINTS; PR01664; NACHANNEL.

DR PRINTS; PR01664; NACHANNEL.

DR PRINTS; PR01664; NACHANNEL.

DR PRINTS; PR01664; NACHANNEL.

DR PROSITE; PS30096; IO; FALSE NEG.

MAlternative splicing; Disease mutation; Epilepsy; Glycoprotein; Repeat; Multigene family; Polymorphism; Polymorphism; Repeat; Multigene family; Polymorphism; Polymorphism; Polymorphism; Polymorphism; Polymorphism; Polymorphism; Polymorphism; Polymorphism; Polymorph
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EMBL; AV043484; AAK95360.1; -.
EMBL; AB093548; BAC21101.1; -.
EMBL; AB093549; BAC21102.1; -.
EMBL; S71446; AAB31605.1; -.
EMBL; X63362; CAA46439.1; -.
EMBL; X63362; CAA46439.1; -.
EMBL; M91803; -; NOT_ANNOTATED_CDS.
PIR; I52964; I52964.
PIR; S29184; S29184.
HSSP; P04775; 1BYY.
HSSP; P04775; 1BYY.
         RSOdium channel;
REPEAT 110
REPEAT 750
REPEAT 1520
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HSSP; P04779 RGD; 69364;

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InterPro; IPR001682; InterPro; IPR002111; InterPro; IPR005821;

Ca/Na_pore.
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05-JUL-2004 (Rel. 4
Sodium channel prot
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                                                                                   This SWISS-PROT entry is copyright. It is produced through between the Swiss institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restrues by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-s or send an email to license@isb-sib.ch).
                                    EMBL; X03638; CAA27286.1;
EMBL; M22253; AAA79965.1;
PIR; A25019; A25019.
HSSP; P04775; 1BYY.
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J. Recept. Res. 7:467-497(1987).
-!- FUNCTION: Mediates the voltage-dependent sodium ion
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
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InterPro; IPR005820; M+channel nlg.
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InterPro; IPR001695; Na_channel.
InterPro; IPR0016951; Na_channel.
InterPro; IPR001626; Na_trans_assoc.
JR Pfam; PF00520; Ion_trans_; 4.
DR Pfam; PF00512; IQ; I.
DR Pfam; PF00512; IQ; I.
DR Pfam; PF00512; Na_trans_assoc; 1.
PFNINTS; PR00170; NACHANNEL.
DR PRINTS; PR01164; NACHANNEL.
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A Hayashida K., Hayatsu N., Hiramoto K., Hiracka T., Hirozane T.,
A Hori F., Imotani K., Ishii Y., Itoh M., Kagawa I., Kasukawa T.,
A Katoh H., Kawai J., Kojima Y., Kondo S., Konno H., Kouda M., Koya S.,
A Kurihara C., Matsuyama T., Miyazaki A., Murata M., Nakamura M.,
A Kurihara K., Numazaki R., Ohno M., Ohsato N., Okazaki Y.,
A Nishi K., Nomura K., Numazaki R., Ohno M., Ohsato N., Okazaki Y.,
A Saito R., Saitoh H., Sakai C., Sakai K., Sakazume N., Sano H.,
Sasaki D., Shibata K., Shinagawa A., Shiraki T., Sogabe Y., Tagami M.,
A Sasaki D., Shibata K., Shinagawa A., Shiraki T., Sogabe Y., Tagami M.,
Tagawa A., Takahashi F., Takaku-Akahira S., Takeda Y., Tanaka T.,
A Tomaru A., Toya T., Yasunishi A., Muramatsu M., Hayashizaki Y.;
Li Submitted (UUL-2001) to the EMBL/GenBank/DDBJ databases.
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C. STRAIN=C57BL/6J; FISSUE=Hypothalamus;

X. MEDLINE=20530913; FubMed=11076861;

X. MEDLINE=20530913; FubMed=110
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NCBI_TaxID=10090;
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STRAIN-C57BL/6J; TISSUB-Hypothalamus;

MEDLINE=20499374; pubMed=11042159;

Carninci P., Shibata Y., Hayatsu N., Sugahara Y., Shibata K.,

Konno H., Okazaki Y., Muramatsu M., Hayathizaki Y.;

*Normalization and subtraction of cap-trapper-selected cDNAs t
prepare full-length cDNA libraries for rapid discovery of new

Genome Res. 10:1617-1630(2000).
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01-MAR-2003 (TYENBELrel. 23, Last sequence update)
01-JUN-2003 (TYENBELrel. 24, Last annotation update)
Mus musculus adult male hypothalamus cDNA, RIKEN fu
library, clone:A230052E19 product:sodium channel pr
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Nature 420:563-573(2002).
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STRAIN=C57BL/6J; TISSUE=Hypothalamus;
The FANTOM Consortium,
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STRAIN=C57BL/6J; TISSUE=Hypothalamus;
MEDLINE=21085660; PubMed=11217851;
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STRAIN=C57BL/6J; TISSUE=Hypothalamus;
MEDLINE=99279253; PubMed=10349636;
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Sciurognathi; Muridae;
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RMGD; MGI:107636; Scn9a.

RGO; GO:0016021; C:integral to membrane; IEA.

RGO; GO:001518; C:voltage-gated sodium channel complex; IEA.

RGO; GO:0005261; F:cation channel activity; IEA.

RGO; GO:0005248; F:voltage-gated sodium channel activity; IEA.

RGO; GO:000612; F:voltage-gated sodium channel activity; IEA.

RGO; GO:000612; P:voltage-gated sodium channel IEA.

RINEEPRO; IPR005820; ColNa Dore.

RINEEPRO; IPR005820; M-channel nlg.

RINEEPRO; IPR005820; M-channel nlg.

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RF4mm; PF00612; IO, Trans; 1.

RPF4m; PF00612; IO, Trans; 1.
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Best Local (
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GO; GO:0001518; C:voltage-gated sod
GO; GO:0005261; F:cation channel ac
GO; GO:0005248; F:voltage-gated sod
GO; GO:0005248; F:voltage-gated sod
GO; GO:0006812; P:cation transport;
GO; GO:0006814; P:sodium ion transp
InterPro; IPR001682; Ca/Na pore.
InterPro; IPR000048; IQ_region.
InterPro; IPR001696; Na_channel.
Pfam; PF00612; IQ; 1.
PRINTS; PR00170; NACHANNEL.
SNART; SM00015; IQ; 1.
PROSITE; PS50096; IQ; 1.
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SMART; SM00015; IQ; 1.
Ion transport; Ionic channel;
Transport; Voltage-gated chann
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Submitted (MAY-1995) to the EMBL/GenBa-
-- SUBCELLULAR LOCATION: Integral mem
--- SIMILARITY: Belongs to the sodium
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Bukaryota; Metazoa;
Mammalia; Eutheria;
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Sodium channel 25.
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GO:0001518; C:voltage-gated sodium channel complex; IEA.
GO:0005261; F:cation channel activity; IEA.
GO:0005248; F:voltage-gated sodium channel activity; IEA.
GO:0006812; P:cation transport; IEA.
GO:0006814; P:sodium ion transport; IEA.
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Best Local !
                                                                                                                                                       Q28644 PRELIMINARY; P
Q28644;
Q18644;
Q1-NOV-1996 (TrEMBLrel. 01, Cre
Q1-NOV-1996 (TrEMBLrel. 26, Lag
Q1-MAR-2004 (TrEMBLrel. 26, Lag
Sodium channel alpha-subunit.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPRO01682; Cal Na pore.
InterPro; IPRO02111; Cat channel_TrpL.
InterPro; IPRO08821; IOn_trans.
InterPro; IPR000048; IQ region.
InterPro; IPR005820; M-Channel nlg.
InterPro; IPR010586; Na_channel nlg.
InterPro; IPR010586; Na_channel nlg.
InterPro; IPR010586; Na_trans_assoc.
Pfam; PF00520; Ion_trans; 4.
Pfam; PF00612; Na_trans_assoc; 1.
PRINTS; PR00170; NACHANNEL.
                                                             Bukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9986;
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    SEQUENCE FROM N.A. STRAIN=New Zealand
                                                                                                               Oryctolagus cuniculus (Rabbit).
Bukaryota; Metazoa; Chordata; Craniata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PR00170;
SMART; SM00015;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=95237189; PubMed=7720699; Klugbauer N., Lacinova L., Flockerzi V., Hofmann F.; "Structure and functional expression of a new member of tetrodotoxin-sensitive voltage-activated sodium channel human neuroendocrine cells."; EMBO J. 14:1084-1090(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      lon transport; Ionic channel;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GO; GO:0005248; F:voltage-gated sodium GO; GO:0006814; P:sodium ion transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genew; HGNC:10597; SCN9A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR; S54771; S54771.
HSSP; P04775; 1BYY.
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Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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-!- SUMILARITY: Belongs to the sodium channe
EMBL; X82835; CAA58042.1; -.
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  White;
                                                                                              Lagomorpha;
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TISSUE=Sciatic nerve
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Pred. No.
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                                                                                         Leporidae;
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                                                                                                          Vertebrata; Euteleostomi;
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                                                                                         Oryctolagus
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RESULT 17
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R HMSD; P04775; LBYY.

R GO; GO:0016021; C:integral to membrane; IEA.

R GO; GO:0001518; C:voltage-gated sodium channel con

R GO; GO:0005261; F:cation channel activity; IEA.

R GO; GO:0005261; F:cation channel activity; IEA.

R GO; GO:0006812; F:voltage-gated sodium channel act

GO; GO:0006814; P:sodium ion transport; IEA.

R GO; GO:0006814; P:sodium ion transport; IEA.

R InterPro; IPR001882; Ca/Na pore.

R InterPro; IPR002111; Cat_channel_TrpL.

R InterPro; IPR00211; Cat_channel_nlg.

R InterPro; IPR00520; IOn_trans.

R InterPro; IPR005821; IOn_trans.

R InterPro; IPR001956; Na_channel.

R InterPro; IPR001956; Na_channel.

R InterPro; IPR001526; Na_trans_assoc.

R Pfam; PF00520; IOn_trans; 4.

R Pfam; PF00512; Na_trans_assoc; 1.

R Pfam; PF00512; Na_trans_assoc; 1.

R Pfam; PF00512; Na_trans_assoc; 1.
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Best Local
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                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE-97188502; PubMed=9037087;

Toledo-Aral J.J., Moss B.L., He Z.J., Koszowski A.G., Whisenand T.,

Toledo-Aral J.J., Moss B.L., He Z.J., Koszowski A.G., Whisenand T.,

Levinson S.R., Wolf J.J., Silos-Santiago I., Halegoua S., Mandel G.;

"Identification of PNI, a predominant voltage-dependent sodium channel expressed principally in peripheral neurons.";

expressed principally in peripheral neurons.";

Natl. Acad. Sci. U.S.A. 94:1527-1532(1997).
Sangameswaran L., Fish L.M., Koch B.D., Rabert D.K., De Ilnicka M., Jakeman L.B., Novakovic S., Wong K., Sze P. Stewart G.R., Hunter "A novel tetrodotoxin-sensitive, voltage-gated sodium o
                                                                                                                                                          Kozak C.A., Sangameswaran L.;
"Genetic mapping of the peripheral
Scn10a, in the mouse.";
Mamm. Genome 7:787-788(1996).
                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. MEDLINE=97007982; PubMed=8854872;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-UIL-1997 (TrEMBLrel. 04, Created)
01-UIL-1997 (TrEMBLrel. 27, Last sequence update)
05-UIL-2004 (TrEMBLrel. 27, Last annotation update)
PNI (Voltage-gated sodium channel) (Fragment).
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01-JUL-1997
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Transport; Voltage-gated channel.
SEQUENCE 1984 AA; 225748 MW;
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Belcher S.M., Zerillo C.A., Levenson
"Cloning of a sodium channel alpha su
                                                                                                             SEQUENCE FROM N.A.
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SUBCELLULAR LOCATION: Integral membrane protein (
SIMILARITY: Belongs to the sodium channel family.
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100.0%;
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Pred. No.
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                                                                                                                                                                                                                     genes,
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              P.,
er J.C.
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                                                                                 Delgado S.
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Proc. [2]

P SEQUENCE FROM N.A.

P SEQUENCE FROM N.A.

AC TISSUE-Cerebellum;

RA Vega-Saenz de Miera E., Rudy B., Sugimori F.,

RA Vega-Saenz de Miera E., Rudy B., Sugimori F.,

RA Vega-Saenz de Miera E., Rudy B., Sugimori F.,

RA Vega-Saenz de Miera E., Rudy B., Sugimori F.,

RA Vega-Saenz de Miera E., Rudy B., Sugimori F.,

RA Vega-Saenz de Miera E., Sugimori F.,

RA Vega-Saenz de Miera E., Rudy B., Sugimori F.,

RA Vega-Saenz de Miera E., Rudy B., Sugimori F.EA.

DR GO; GO:0016321; C:integral to membrane; IEA.

DR GO; GO:0005249; F:voltage-gated potassium channel act/

GO; GO:0006812; P:cation transport; IEA.

DR GO; GO:0006813; P:potassium ion transport; IEA.

DR GO; GO:0016813; P:potassium ion transport; IEA.

There's Teres IPRO01682; Ca/Ma_pore.

There's Teres IPRO01682; Ca/Ma_pore.
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R GO; GO:0016021; C:integral to membrane; IEA.

R GO; GO:0001518; C:voltage-gated sodium channel complex; IEA.

R GO; GO:0001518; C:voltage-gated sodium channel activity; IEA.

DR GO; GO:0005261; F:cation channel activity; IEA.

DR GO; GO:0005248; F:voltage-gated sodium channel activity; IEA.

DR GO; GO:0006812; P:cation transport; IEA.

DR GO; GO:0006812; P:cation transport; IEA.

DR InterPro; IPR001682; CANA_pore.

DR InterPro; IPR002111; Cat_Channel_TTPL.

DR InterPro; IPR005821; Ion_trans.

DR InterPro; IPR005820; M+Channel.

DR InterPro; IPR005820; M+Channel.

DR InterPro; IPR005820; M+Channel.

DR InterPro; IPR005826; Na_channel.

DR InterPro; IPR005826; Na_channel.

DR InterPro; IPR005826; Na_trans_assoc.
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Best Local S
Matches 24
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SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
TISSUE=Cerebellum;
MEDLINE=97338144; PubMed=9192691;
de Miera E.V.S., Rudy B., Sugimori M., Llinas R.;
Molecular characterization of the sodium channel
"Molecular characterization of the sodium channel
"mammalian cerebellar purkinje cells ";
"ammalian cerebellar purkinje cells ";
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054811;
01-JUN-1998
01-JUN-1998
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Pfam; PF00612; IQ
Pfam; PF06512; Na
PRINTS; PR00170;
SMART; SM00015;
                                                                                                                                                                                                                                                                                                                                                                                                     Cavia porcellus (Guinea pig).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                     GPBI (Fragment).
Cavia porcellus (Guinea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ion transport; Ionic comments
Transport; Voltage-gated channel.
1984 1984
1984 1984
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       expressed in rat and human dorsal J. Biol. Chem. 0:0-0(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -!- SUBCELLULAR LOCATION: Integ
                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=10141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PF00520; Ion trans; 4.
PF00612; IQ; 1.
PF06512; Na trans assoc;
S; PR00170; NACHANNEL.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      85.7%;
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Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi; Hystricognathi; Caviidae; Cavia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. 5.
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el family.
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databases.
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                                                                                                             activity; IEA
                                                                                                                                           complex;
                                                                                                                                                                                                                                                                                                subunits expressed
                                                                                                                                           IEA.
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RESULT 20
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Best Local
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Best Local
                                                                                                                                                                                                                                                                                                                                                   Dyer J.R., Johnston W.L., Castelluc "Cloning and tissue distribution of subunit cDNA.";

Bunnit cDNA.";

DNA Cell Biol. 16:347-356(1997).

-!- SUBCELLULAR LOCATION: Integral -!- SUMILARITY: Belongs to the sodi EMBL; U66915; AAC474577.1;

-- PIR; 730902; T30902.

HSSP; P04775; 1BYY.

GO; GO:0016021; C:integral to membr GO; GO:001518; C:voltage-gated sod GO; GO:0005261; F:cation channel ac GO; GO:0005281; F:cation transport; GO; GO:0006812; P:cation transport; GO; GO:0006814; P:sodium ion transport; GO; GO:006814; P:sodium ion transport;
                                                                                                                                                                                                                    InterPro; IPR001682; Ca/Na pore.
InterPro; IPR002111; Cat channel TrpL.
InterPro; IPR005821; Ion trans.
InterPro; IPR005820; M-channel nlg.
InterPro; IPR005820; M-channel.
InterPro; IPR001696; Na channel.
InterPro; IPR001696; Na trans assoc.
Pfam; PF06512; Na trans; 4.
Pflam; PF06511; Na trans assoc; 1.
PRINTS; PR00170; NACHANNEL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sodium channel alpha-subunit SCAP1.
Aplysia californica (California sea hare).
Eukaryota, Metazoa; Mollusca, Gastropoda; Orthogastropoda;
Apogastropoda; Heterobranchia; Euthyneura; Opisthobranchia; Anaspidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P90670;
01-MAY-1997 (TrEMBLrel. 03, Created)
01-MAY-1997 (TrEMBLrel. 03, Last sequence update)
01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=Nervous system;
MEDLINE=97238630; PubMed=9115644;
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InterPro; IPR005820; M+cha
Pfam; PF00520; Ion trans;
PRINTS; PR00169; KCHANNEL.
                                                                                                                                                                          Ion transport; Ionic channel; Sodium channel; Transmembrane;
Iransport; Voltage-gated channel.
SEQUENCE 1993 AA; 225896 MW; 33E174B9BF07E1A7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=6500
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NON TER 279 279
                                                          1719
                                                                                                                                                                                                                                                                                                                                            P; P04775; IBYY.

G0:0016021; C:integral to membrane; IRA.
G0:001518; C:voltage-gated sodium channel complex; IEA.
G0:0002521; F:cation channel activity; IEA.
G0:0005248; F:voltage-gated sodium channel activity; IEA.
G0:0006812; P:cation transport; IEA.
G0:0006814; P:sodium ion transport; IEA.
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17; Conserv
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                                                         SFLVVVNMYIAVILENF 1735
                                                                                     SFLVVVNMYIAVILENF
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                                                                                                                  Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Aplysiidae;
                                                                                                          60.7%; Pr
100.0%; Pr
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M+channel_nlg.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Aplysia.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Integral membrane protein (By the sodium channel family.
                                                                                     28
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                                                                                                                                Score 17;
Pred. No.
                                                                                                                  Mismatches
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le-08;
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                                                                                                                                            Length 1993;
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ID Q91BF1
AC Q91BF1;
AC Q91BF1;
DT 01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
DT 01-OCT-2000 (TrEMBLrel. 26, Last annotation update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DT Voltage-gated sodium channel.
OS Takifugu pardalis (Panther puffer).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
OC Acanthomorpha; Acanthopterygii; Percomorpha; Tetraodontiformes;

Tatradontoidea; Tetraodontidae; Takifugu.
                                                                                                                                                                                                                                                                                                                                                             RESULT 21
054812
RRR OCC OCC DIT DAC
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                                                                                                                   054812 PRELIMINANI,
054812;
054812;
01-JUN-1998 (TrEMBLrel. 06, Creat
01-JUN-1998 (TrEMBLrel. 24, Last
I 01-JUN-2003 (TrEMBLrel. 24, Last
E CerIII (Fragment).
S Cavia porcellus (Guinea pig).
S Cavia porcellus (Guinea pig).
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Best Local S
Matches 16
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GO; GO:001518; C:voltage-gated sodium channel con
GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:0005248; F:voltage-gated sodium channel act
GO; GO:0005248; F:voltage-gated sodium channel act
GO; GO:0006812; P:cation transport; IEA.
InterPro; IPR001682; Ca/Na pore.
InterPro; IPR0001682; Ca/Na pore.
InterPro; IPR005821; Jon trans.
InterPro; IPR005821; Jon trans.
InterPro; IPR005820; M+Channel nlg.
InterPro; IPR005820; M+Channel nlg.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
InterPro; IPR001696; Na_channel.
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Pfam; PF00612; IQ; 1.

Pfam; PF06512; Na trans assoc; 1.

PRINTS; PR00170; NACHANNEL.

PROSITE; PS50096; IQ; 1.

Ion transport; Tonic channel; Sodium channel; Transmembrane;

Transport; Voltage-gated channel.
                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
SEQUENCE FROM N.A.
TISSUB=Cerebellum;
                                                                           NCBI_TaxID=10141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AB030482; BAA90398.1; HSSP; P04775; 1BYY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and to skeletal muscle membranes of puffer fish Fugu pardalis, and the primary structure of a voltage-gated Na+ channel alpha-subunit (fMNa1) from skeletal muscle of F. pardalis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
TISSUE=Skeletal mu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yasumoto
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      otsu-Yamashita M., Nishimori K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Binding properties of 3H-PbTx-3 and 3H-saxitoxin to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     chem. Biophys. Res. Commun. 267:403-412(2000). SUBCELLULAR LOCATION: Integral membrane protein (SIMILARITY: Belongs to the sodium channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1608
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16; Conser
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                                                                                                          Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          212084 MW;
                                                                                                                                                                                                            Created)
Last sequence update)
Last annotation update)
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                                                                                                                            Craniata; Vertebrata; Euteleostomi;
                                                                                                    Hystricognathi; Caviidae; Cavia.
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3. 4.2e-07;
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R PIR; A45752; A45752.

R GO; GO:0015021; C:integral to membrane; IEA.

R GO; GO:0001518; C:voltage-gated sodium channel com

R GO; GO:0005261; F:cation channel activity; IEA.

R GO; GO:0005248; F:voltage-gated sodium channel act

R GO; GO:0005248; F:voltage-gated sodium channel act

R GO; GO:0006812; P:cation transport; IEA.

R GO; GO:0006814; P:sodium ion transport; IEA.

R InterPro; IPR001682; Ca/Na pore.

R InterPro; IPR001521; Cat_Channel_TrpL.

DR InterPro; IPR005211; Cat_Channel_TrpL.

DR InterPro; IPR005221; IOn_trans.

DR InterPro; IPR005820; M+Channel_nlg.
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Best Local S
Matches 14
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GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0008076; C:voltage-gated potassium channel complex; IEA
GO; GO:0005261; F:cation channel activity; IEA.
GO; GO:0005249; F:voltage-gated potassium channel activity; IE
GO; GO:0006812; P:cation transport; IEA.
GO; GO:0006813; P:potassium ion transport; IEA.
InterPro; IPR001682; Ca/Na pore.
InterPro; IPR005821; Ion trans.
InterPro; IPR005821; K Channel.
R InterPro; IPR005820; M-Channel.
R InterPro; IPR005820; M-Channel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q63360;
Q63360;
                                                                                                                                                                                                                                                                                                                                                                                                "Expression of diverse Na+ channel messenger RNAs Evidence for a cardiac-specific Na+ channel."; J. Clin. Invest. 84:331-336(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=89292178; PubM
Sills M.N., Xu Y.C., B
Mandel G., Chien K.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. TISSUE=Myocardium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vega-Saenz de Miera E., Rudy
Submitted (MAY-1997) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. TISSUE=Cerebellum;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          de Miera E.V.S., Rudy B., Sugimori M., Llinas R., "Molecular characterization of the sodim channel in mammalian cerebellar Purkinje cells.", Proc. Natl. Acad. Sci. U.S.A. 94:7059-7064(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Proc. Natl. Acad. [2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Name=Na+ channel;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ğ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00520; Ion_trans; PRINTS; PR00169; KCHANNEL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -NOV-1996 (TrEMBLrel.
-NOV-1996 (TrEMBLrel.
-JUN-2003 (TrEMBLrel.
+ channel (Fragment).
                                                                                                                                                                                                                                                                                                                                              Clin. Invest. 84:331-336(1989).
SUBCELLULAR LOCATION: Integral membrane protein (By similarity)
SIMILARITY: Belongs to the sodium channel family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transport; Ionic channel; Transmembrane; Transport.
TER 278 278
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      278 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=2544627;
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Last annotation update)
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EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
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Pred. No.
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Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65741B14C6AE649A CRC64;
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Mismatches
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9.2e-(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Vertebrata; Euteleostomi;
thi; Muridae; Murinae; Rattus.
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databases.
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                                                                                                                                                                                                                                            complex; IEA.
                                                                                                                                                                                                activity; IEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
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Q9P2Q6;
01-OCT-2000
                                                                                                Transport;
NON_TER
NON_TER
                                                                                                                                                                                                                                                               -!- SUBCELLULAR LOCATION: Integral membrane protein (By simi:
-!- SIMILARITY: Belongs to the sodium channel family.

EMBL; AB037525; BAA90445.1; -.
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:001518; C:voltage-gated sodium channel complex; IEA.
GO; GO:0005248; F:cation channel activity; IEA.
GO; GO:0005248; F:voltage-gated sodium channel activity; IEA.
GO; GO:0006812; P:cation transport; IEA.
GO; GO:0006814; P:sodium ion transport; IEA.
                                                                                                                                                    Pfam; PF00520; Ion trans; 1.
Pfam; PF00612; IQ; 1.
PRINTS; PR00170; NACHANNEL.
SMART; SM00015; IQ; 1.
                                                                                                                                                                                                                                             InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Voltage-gated sodium channel alpha subunit (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS; PR00170; NACHANNEL.
SMART; SM00015; IQ; 1.
PROSITE; PS50096; IQ; 1.
Ion transport; Ionic channel;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001696; Na_channel. Pfam; PF00520; Ion_trans; 1. Pfam; PF00612; IQ; 1.
                                                                                                                                                                                                                                                                                                                                                                     Submitted (JAN-2000)
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                                                                                      SEQÜENCE
                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Name=SCN8A;
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                                                                                                                                           PROSITE; PS50096;
                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                   Kitano
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                                                                                                                               PROSITE; PS50096; IQ; 1.
                                                                                                                                                                                                   InterPro;
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131
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                                         14;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14;
                                                      Similarity
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             GIFFFVSYIIISFL 14
GIFFFVSYIIISFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GIFFFVSYIIISFL
                                                                                                                                                                                                  IPR005821; Ion trans.
IPR000048; IO region.
IPR005820; M+channel nlg.
IPR001696; Na_channel.
                                                                                                                                                                                                                                          IPR001682; Ca/Na_pore.
IPR002111; Cat_channel_TrpL.
                                                                                                                     Voltage-gated
                                                                                      364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            324 AA; 36863 MW;
                                                                                                                                                                                                                                                                                                                                                                                 Kobayakawa
                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
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                                                                                      AA;
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                                                                                      41263 MW;
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144
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ne EMBL/GenBank/DDBJ databases
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                                                     Score 14;
Pred. No.
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Pred. No.
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                                                                                                                                  Sodium
                                                                                                                                                                                                                                                                                                                                                                                                                            Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                      BA5760C962BE6786 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                            Mismatches
                                                                                                                                  channel; Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               364
                                                     DB 2;
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                                                               Length
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RESULT 24

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RESULT
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Best Local S
Matches 14
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Kitano T., Kobayakawa H., Saitou N.;

Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.

CC -!- SUBCELLULAR LOCATION: Integral membrane protein (By similarity).

CC -!- SIMILARITY: Belongs to the sodium channel family.

REMBL, AB037528; BAA90448 1; --

DR GO; GO:001518; C:voltage-gated sodium channel complex; IEA.

DR GO; GO:0005246; F:cation channel activity; IEA.

DR GO; GO:0005261; F:cation channel activity; IEA.

DR GO; GO:0005248; F:voltage-gated sodium channel activity; IEA.

DR GO; GO:0005248; F:cation transport; IEA.

DR GO; GO:0006811; P:sation transport; IEA.

DR GO; GO:0006814; P:sodium ion transport; IEA.

DR GO; GO:0006814; P:sodium ion transport; IEA.

DR InterPro; IPR001611; Cat channel TrpL.

DR InterPro; IPR00182; Ca/Na pore.

DR InterPro; IPR000184; IO Trans.

DR InterPro; IPR000189; IOn trans.

DR InterPro; IPR0005821; Ion trans.

DR InterPro; IPR0005821; Ion trans.

DR InterPro; IPR0005821; Ion trans.

DR InterPro; IPR001696; Na_channel nlg.

Ffam; PF00612; IO, 1.

DR PFAm; PF00512; IO, 1.

DR PFAm; PF00512; IO, 1.

DR PFAM; SM00015; IO, 1.

DR PFAM; SM00015; IO, 1.

DR PROSITE: PS500196; TO; 1
Kitano T., Kobayakawa H., Saitou N.;
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: Integral membrane protein (By
-!- SIMILARITY: Belongs to the sodium channel family.
EMBL; AB037527; BAA90447.1; -.
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0001518; C:voltage-gated sodium channel complex;
                                                                                                                                                                                                                          Q9N2E4;
01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-OUN-2003 (TrEMBLrel. 24, Last annotation update)
...
                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Gorilla. NCBI_TaxID=9593;
                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                               Gorilla gorilla (gorilla).
                                                                                                                                                                                                                                                                                                                                     Q9N2E4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NON TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transport; Voltage-gated channel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9N2E3 PRELIMINARY; PRT; 364 AA.
Q9N2E3;
01-CCT-2000 (TrEMBLrel. 15, Created)
01-CCT-2000 (TrEMBLrel. 15, Last sequence update)
01-UTV-2003 (TrEMBLrel. 24, Last amoutation update)
Voltage-gated sodium channel alpha subunit (Fragment).
Name=SCNBA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROSITE; PS50096; IQ; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pongo pygmaeus (Orangutan).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pongo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9600;
                                                                                                                                                                                                                                                                                                                                                                                                                  131 GIFFFVSYIIISFL 144
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      364 AA;
                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41235 MW;
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                364 AA.
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GO; GO:0005248; F:voltage-gated sodium cl
GO; GO:0006812; P:cation transport; IEA.
GO; GO:0006814; P:sodium ion transport;
InterPro; IPR001682; Ca/Na_pore.
InterPro; IPR002111; Cat_channel_TrpL.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005821; Ion_trans.
InterPro; IPR005820; M+Channel_nlg.
InterPro; IPR005820; M+Channel_nlg.
InterPro; IPR001966; Na_channel.
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SEQUENCE
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Pfam; PF00612; IQ; 1.
PRINTS; PR00170; NACHANNEL.
PROSITE; PS50096; IQ; 1.
Ion transport; Ionic channel; Sodium channel; Transmembrane;
                                                                                                                                       Transport;
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GIFFFVSYIIISFL 144
                      GIFFFVSYIIISFL
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364 AA;
                                                                                                                                       Voltage-gated channel
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                                                                                                                                                                                                                                                                                   F:voltage-gated sodium channel activity;
P:cation transport; IEA.
P:sodium ion transport; IEA.
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                                                Score 14; DB; Pred. No. 1.1
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                                                                       Length 364,
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                                            Gaps
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Search completed: January 27, 2005, 17:51:35 Job time: 94.5 gecs

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Sequence 13 Patent No.

COUNTRY:

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Sequence 14, Application US/08605284B
PACENT NO. 6060271
GENERAL INFORMATION:
APPLICANT: WALEWSKI, JOSE L.
APPLICANT: RECIO-PINTO, ESPERANZA
TITLE OF INVENTION: VOLTAGE GATED SODIUM CHANNELS FROM
TITLE OF INVENTION: HUMAN PERIPHERAL NERVE
                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 1
US-08-605-284B-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: 716-263-1600
INFORMATION FOR SEQ ID NO: 13:
SEQUENCE CHARACTERISTICS:
LENGTH: 310 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: BRAMAN, SUSAN J.
REGISTRATION NUMBER: 34,103
REFERENCE/DOCKET NUMBER: 1960
TELECOMMUNICATION INFORMATION:
TELEPHONE: 716-263-1636
                                                                                                                      NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                            STREET: CLINTON CITY: ROCHESTER STATE: NEW YORK COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: Patentin Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/605,284B
FILING DATE: 09-FEB-1996
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                 ADDRESSEE: NIXON, HARGRAVE, DEVANS & DOYLE LLP
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APPLICANT: RECTO-PINTO, ESPERANZA
TITLE OF INVENTION: VOLTAGE GATED SODIUM CHANNELS FROM
TITLE OF INVENTION: HUMAN PERIPHERAL NERVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS: not relevant TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
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CLINTON SQUARE, P.O. BOX 1051
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Pred. No. 5.1e-21;
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                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 310;
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US-08-605-284B-15
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                                                                     INFORMATION FOR SEQ ID NO: 15: SEQUENCE CHARACTERISTICS:
                                                                                                                            APPLICATION NUMBER: US/08/605
PILING DATE: 09-FEB-1996
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: BRAMAN, SUSAN J.
REGISTRATION NUMBER: 34,103
REFERENCE/DOCKET NUMBER: 1960
TELECOMMUNICATION INFORMATION:
TET.REDIAMEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patent No. GENERAL I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 15, Application US/08605284B Patent No. 6060271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEPHONE: 716-263-163
TELEFAX: 716-263-1600
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: WALEWSKI, JOSE L. APPLICANT: RECIO-PINTO, ESPE
STRANDEDNESS: not
                                                                                                                                                                                                                                                                                                                                                                                         STREET: CLINTON, HARGRAVE, DEVANS & DOYLE LLP CITY: ROCHESTER STATE: NOCHESTER YORK COUNTRY.
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LENGTH: 310 amino acid
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ATTORNEY/AGENT INFORMATION:
NAME: BRAMAN, SUSAN J.
REGISTRATION NUMBER: 34,103
REFERENCE/DOCKET NUMBER: 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE: Floopy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/605,284B
FILING DATE: 09-FEB-1996
CTARCTORY.
                                                                                                                   TELEPHONE:
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TELEPHONE: 716-263-1636
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TOPOLOGY: linear
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                                 amino acid
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                                              310 amino acids
                                                                                                 716-263-1600
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               not relevant
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VOLTAGE GATED SODIUM CHANNELS FROM
HUMAN PERIPHERAL NERVE
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                                                                                                                                           19603/800 (CRF D-1705)
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Pred. No. 5.1e-2
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Gaps

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RESULT 2 US-08-605-284B-14

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US-08-605-284B-13

Matches

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RESULT 4
US-08-836-325-7
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Best Local Similarity
                                                            Matches
                                                                                                                                        MOLECULE TYPE:
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                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION UNMBER: PCT/US95/14251
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-UN-1995
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                              TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
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APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral N
TITLE OF INVENTION: Sodium Chanz
TITLE OF INVENTION: Source Drug Design,
TITLE OF INVENTION: Drug Design,
TITLE OF INVENTION: Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC COMPATIBLE
COPPRATING SYSTEM: PC-DOS/MS-DOS
COPPRATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: 1
APPLICANT: 1
APPLICANT: 1
                                                                                                                                                                                                                                                                                                          NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 02-NOV-1994 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 1
                                                                                                                                                                          TYPE: amino acid
STRANDEDNESS: Bir
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: FILING DATE: 2-MAY-
                                                                            Local
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1 GIFFFVSYIIISFLVVVNMYIAVILENF 28
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                                                                              Similarity
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1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                  2005 amino acids
                                                        100.0%; Score 28; DB 3; 1 (larity 100.0%; Pred. No. 2.9e-20; Conservative 0; Mismatches 0;
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Pred. No. 5.1e-21;
                                                                                              Length 2005;
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                                                                      Matches
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                          TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PILING DATE: 09-DEC-1999
CLASSIPICATION: 514
PRIOR APPLICATION UNMBER: 08/836
APPLICATION NUMBER: 08/836
FILING DATE: 02-MAY-1997
PRIOR APPLICATION NUMBER: PCT/US
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TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/41
FILING DATE: 07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA: US
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APPLICANT: Halegoua,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE: Floppy diak
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                             NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                 TOPOLOGY:
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                                                                                       Local
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1752 GIFFFVSYIIISFLVVVNMYIAVILENF 1779
                                                                                           Similarity
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                                                                                                                                                                                                                                      2005 amino acids
                                                                      100.0%; Score 28; DB 4; llarity 100.0%; Pred. No. 2.9e-20 Conservative 0; Mismatches 0.
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Sodium Channels, DNA Encoding Therefor, Crystallization,
X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and Using
Thereof
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N. W., Suite 600
                                                                                                          Length 2005;
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RESULT 6 US-08-605-284B-4

Sequence 4, Application US/08605284B Patent No. 6060271

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US-08-605-284B-5
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APPLICANT: MALEWSKI, JOSE L.
APPLICANT: RECIO-PINTO, ESPERANZA
TITLE OF INVENTION: VOLTAGE GATED SODIUM CHANNELS FROM
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
CORRESPONDENCE MITTON HARGRAVE, DEVANS & DOYLE LLP
                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compactible
OPERATING SYSTEM: PC-DOS/MS-DOS
CURRENT APPLICATION DATA:
TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TOTAL TO
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Best Local (
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STREET: CLIA...
CITY: ROCHESTER
STATE: NEW YORK
APPLICATION NUMBER: US/OF FILING DATE: 09-FEB-1996
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APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US/08/605,284B
FLING DATE: 09-FEB-1996
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
REGISTRATION NUMBER: 34,103
REFERENCE/DOCKET NUMBER: 19603/800 ((
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SEQUENCE CHARACTERISTICS: 4:
LENGTH: 309 amino acids
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MOLECULE TYPE:
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APPLICANT: WALEWSKI, JOSE L.
APPLICANT: RECIO-FUNTO, ESPERANZA
TITLE OF INVENTION: VOLTAGE GATED SODIUM CHANNELS FROM
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
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MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
COPPRESSED: DATASHIP PC-TOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: amino acids
STRANDEDNESS: not releva
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ZIP: 14603
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CITY: ROCHESTER
CRANT ROCHESTER
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27; Conservative
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CLINTON SQUARE, P.O. BOX 1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NEW YORK
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                                          US/08/605,284B
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t; Pred. No. 5.3(
0; Mismatches
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NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 0917
TELEPHONE: 202-371-2600
                                                                                               PRIOR DATE: 02-NOV-1995

PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/482

PRIOR APPLICATION NUMBER: 08/482

PRIOR APPLICATION DATA: 521111195

APPLICATION NUMBER: 08/334

ATTORNEY/AGENT INFORMATION: 08/334

NAME: INDA'S 05-NOV-1994
TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible OPERATING SYSTEM: PC_DOS/MS-DOS SOFTWARE: Patentin Release #1.0, VERILING DATE: 2-MAY-10/08/836 20-CLASSTERM: 2-MAY-11-10/08/836 20-CLASSTERM: 2-MAY-11-10/08/836 20-CLASSTERM: PC_DOS/MS-DOS PC
                                                                                                                                                                                                          CLASSIFICATION: 514
PRIOR APPLICATION DATA,
APPLICATION NUMBER: PC
FILING DATE: 02-NOV-19
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US-08-836-325-8
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Best Local Similarity 100.0%;
Matches 27; Conservative (
                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Halegoua, Simon
APPLICANT: Halegoua, Simon
APPLICANT: Halegoua, Simon
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Socium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: LL. CITY: Washington
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SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: USA
ZIP: 20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION: TELEPHONE: 716-263-1636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: BRAMAN, SUSAN J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: 716-263-1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: 11
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REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GIFFFVSYIIISFLVVVNMYIAVILEN 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                    E: STERNE, KESSLER,
1100 New York Ave.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Application US/08836325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            i: 309 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
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                                                                                                                              08/334,029
                                                                                                                                                                        08/482,401
                                                                                                                                                                                                                   PCT/US95/14251
                                                 0917.0240002
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                                                                                                                                                                                                                                                                                                                                                                                                                                         GOLDSTEIN & FOX P.L.L.C
N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          19603/800 (CRF D-1705)
                                                                                                                                                                                                                                                                                                    Version #1.30
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RESULT 9
US-09-457-571-8
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GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
Simon
TITLE OF INVENTION:
FOR 
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COMPUTER READABLE FOR
MEDIUM TYPE: Flopt
COMPUTER: IBM PC C
OPERATING SYSTEM:
                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                          NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKST NUMBER: 09
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/482,401

FILING DATE: 07-JUN-1995

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/334,029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/8:
FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
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TOPOLOGY: li
MOLECULE TYPE:
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: FILING DATE: 09-DEC CLASSIFICATION: 514
                                                       STRANDEDNESS:
TOPOLOGY: lir
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FILING DATE: 02-NOV-1995
                                                                                                                                                                                                                                       TELEFAX:
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ZIP: 20005-3934
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                                                                                                                                              LENGTH:
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                                                                                                                                                                                                                                       202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                    linear
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; Pred. No.
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                                                                                                                          ; MOLECULE TYPE: protein US-08-836-325-2
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US-08-836-325-2
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                                                                              Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: PCT/US95/142)
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334,029
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral I
TITLE OF INVENTION: Sodium Cham
TITLE OF INVENTION: X-ray Diffra
TITLE OF INVENTION: Drug Design.
TITLE OF INVENTION: Thereof
                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY: USA
ZIP: 20005-3934
COMPUTER REALABLE FORM:
MEDIUM TYPE: Floppy d.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 2-MAY-1:
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 1011 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/836,325
                                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                            NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET:
                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            617
785 FVSYIIISFLVVVNMYIAVILENF 808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2
                                                              24;
                                5 FVSYIIISFLVVVNMYIAVILENF 28
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6110672
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                                                                                                                                                                          amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: STERNE, KESSLER,
1100 New York Ave.,
                                                                                                                                                                                                                                              202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Halegoua, Simon
                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mandel, Gail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                               202-371-2600
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                                                                              85.7%;
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Sodium Channels, DNA Encoding Therefor, Crystallization,
X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and Using
Thereof
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                                                             Score 24; DB; Pred. No. 1.8
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N. W., Suite 600
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                                                                                             DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                1.8e-1
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                                                                                           Length 1011;
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                                                              Indels
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                                                              Gaps
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                                                                0;
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US-08-836-325-15
       Sequence 15, Application Patent No. 6110672
GENERAL INFORMATION:
APPLICANT: Mandel,
APPLICANT: Halegous
APPLICANT: Halegous
INFORMATION:
                                                                                                                                                    RESULT 12
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                                                                                                                                                                                                                                                                                                                                                     ; MOLECULE TYPE: protein US-09-457-571-2
                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION UNMER: 08/836,325

APPLICATION UNMER: 02-MAY-1997

PRIOR APPLICATION DATA: PCT/US95/14251

APPLICATION UNMER: PCT/US95/14251

PILING DATE: 02-MOV-1995

PRIOR APPLICATION DATA: 08/482,401

PILING DATE: 07-UN-1995

PRIOR APPLICATION UNMER: 08/482,401

PILING DATE: 07-UN-1995

PRIOR APPLICATION DATA: 08/334,029

PILING DATE: 02-MOV-1994

ATTORNEY/AGENT INFORMATION:
NAME: Ludwig, Steven R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Halegoua, (
TITLE OF INVENTION: PA
TITLE OF INVENTION: SA
TITLE OF INVENTION: X.
TITLE OF INVENTION: DI
TITLE OF INVENTION: TH
                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 09-DEC-1999
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 1100
CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
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NO. 6703486
                                                                                                                                                                                                                          5 FVSYIIISFLVVVNMYIAVILENF 28
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                                                                                                              Application US/08836325
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                      Halegoua, Simon
Borden, Laurence
                                                            Mandel, Gail
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1100 New York Ave.,
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                          Laurence A.
Peripheral Nervous System Specific
                                                                                                                                                                                                                                                                     85.7%; Score 24; DB
100.0%; Pred. No. 1.8
tive 0; Mismatches
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N. W., Suite 600
                                                                                                                                                                                                                                                                                                         DB 4; Length 1011;
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Patent No.
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/836,325
FILING DATE: 2-MAY-1997
CLASSIFICATION DATA:
APPLICATION NUMBER: PCT/US95/14251
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/14251
PILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
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Best Local :
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TELEPHONE: 202-371-2600
TELEPAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 15:
                                                                                                                                                                                                                  APPLICANT: Mandel, Gail
APPLICANT: Halegoua, Simon
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
                                                                                                                                        CORRESPONDENCE ADDRESS:
STREET: 1100
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LENGTH: 1835 amino acids
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TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
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FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
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                                                                                                         ADDRESSEE:
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Local Similarity 100.0%;
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REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
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STREET: 1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1604 FVSYIIISFLVVVNMYIAVILENF 1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15, Application US/09457571
5. 6703486
                                                                                                                                                                                   OF SEQUENCES:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20005-3934
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                                                              E: STERNE, KESSLER,
1100 New York Ave.,
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X-ray Diffraction, Computer Molecular Modeling, Rational
Drug Design, Drug Screening, and Methods of Making and Using
Thereof
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                                                              GOLDSTEIN & FOX P.L.L.C
N. W., Suite 600
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COUNTRY: USA

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US-08-836-325-16
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                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
APPLICANT:
ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                    APPLICANT: Halegoua, Simon
APPLICANT: Borden, Laurence A.
APPLICANT: Borden, Leurence A.
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
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TELEPHONE: 202-371-2600
TELEFAX: 202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                             NUMBER OF SEQUENCES: 1
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APPLICATION NUMBER: 08/3:
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/41
FILING DATE: 07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/I
FILING DATE: 02-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acid
STRANDEDNESS: not rele
TOPOLOGY: not relevant
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                                                                                                                                                                     STREET:
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REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
                                                                                                                                                                                           ADDRESSEE:
                                                                                                      COUNTRY:
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                                                                                                                                                  Washington
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                                                                                                                                                                   1100 New York Ave., N. W., Suite 600
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                                                                                                          USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85.7%; Score 24; DB 4; I larity 100.0%; Pred. No. 3.1e-16; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                      Mandel, Gail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08/334,029
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RESULT 15
US-09-457-571-16
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                                                                                                                        COUNTRY: USA
ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/457,571
FILING DATE: 09-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 16, Appli
Patent No. 6703486
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APPLICATION NUMBER: PCT/US95/14251

FILING DATE: 02-NOV-1995

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/482,401

FILING DATE: 07-UUN-1995

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/334,029

APPLICATION NUMBER: 08/334,029
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APPLICANT: Mandel
APPLICANT: Halego
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: 202-371-2600
TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 16:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 02-NOV-1994
ATTORNEY AGENT INFORMATION:
NAME: LUGMIN, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 0917
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: ITITLE OF SEQUENCES:
                                                       CLASSIFICATION: 514
PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: 08/836,325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: protein
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APPLICATION NUMBER: 08/8
FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/
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                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity nes 24; Conserv
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                                                                                                                                                                                                                                                                                                                                                STATE:
                                                                                                                                                                                                                                                                                                                                                               CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
STREET: 1100 New York Ave., N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1721 FVSYIIISFLVVVNMYIAVILENF 1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino acid
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                                                                                                                                                                                                                                                                                                                                              8
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Halegoua, Si
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                85.7%; Score 24; DB 3; Lilarity 100.0%; Pred. No. 3.3e-16; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Peripheral Nervous System Specific
Sodium Channels, DNA Encoding Therefor, Crystallization
X-ray Diffraction, Computer Molecular Modeling, Rationa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drug Design, Drug Screening, and Methods of Making and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Simon
    PCT/US95/14251
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FILING DATE: 02-NOV-1995 PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/4 FILING DATE: 07-JUN-1995

08/482,401

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US-09-919-039-367
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; OTHER INFORMATION: Incyte ID No. 6673549 1719478CD1
US-09-976-594-757
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US-09-976-594-757
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Patent NO. 6673549
GENERRAL INFORMATION:
APPLICANT: Furness, Michael
APPLICANT: Buchbinder, Jenny
TITLE OF INVENTION: GENES EXPRESSED IN C3A LIVER CELL CULTURES TREATED WITH STEROIDS
FILE REPERENCE: PA-0041 US
CURRENT FILING DATE: 2001-10-12
PRIOR APPLICATION NUMBER: 60/240,409
PRIOR FILING DATE: 2000-10-12
PRIOR FILING DATE: 2000-10-12
                                                 Sequence 367, Application US/09919039
Patent No. 6727066
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 1143
SOFTWARE: PERL Program
SEQ ID NO 757
                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                  Query Match
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APPLICANT: Kaser, Matthew R.
TITLE OF INVENTION: GENES EXPRESSED IN TREATED HUMAN C3A LIVER CELL CULTURES
FILE REFERENCE: PA-0035 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Homo sapiens FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 1977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
NAME: Ludwig, Steven R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
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TELEPHONE: 202-371-2600
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APPLICATION NUMBER:
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REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
                                                                                                                                                                                                                                                                    Local
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                                                                                                                                                                                                                                                                Similarity
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                                                                                                                                                                                                                                                85.7%; Silarity 100.0%; Conservative 0;
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                                                                                                                                                                                                                                                Score 24; DB 4; ; Pred. No. 3.3e-1 0; Mismatches
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hes 0;
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CURRENT APPLICATION NUMBER: US/09/919,039
CURRENT FILING DATE: 2002-09-09
PRIOR APPLICATION NUMBER: 60/222,113
PRIOR FILING DATE: 2000-07-28
NUMBER OF SEQ ID NOS: 401
SOFTWARE: PERL PROGRAM
SEQ ID NO 367
LENGTH: 1977
TYPE: PRT
ORGANISM: Homo sapiens
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Best Local Similarity
Matches 24; Conserv
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Patent No. 6110672
                                                                                                                                                                                            CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/836,325
FILING DATE: 2-MAY-1997
CLASSIFICATION: 514
PRIOR APPLICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/14251
FILING DATE: 02-NOV-1995
PRIOR APPLICATION NUMBER: 08/482,401
APPLICATION NUMBER: 08/482,401
FILING DATE: 07-UN-1995
PRIOR APPLICATION NUMBER: 08/334,029
APPLICATION NUMBER: 08/334,029
FILING DATE: 02-NOV-1994
APPLICATION NUMBER: 08/334,029
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 1984 amino aci
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No. 6727066 1719478CD1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Peripheral NNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
NUMBER OF SEQUENCES: 19
                                                                                      TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER,
STREET: 1100 New York Ave.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Mandel, G
APPLICANT: Halegoua,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0,
                                             TELEPHONE: 202-371-2540
                                                                                                                                 NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 0917.0240002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: USA
ZIP: 20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1729
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100.0%; Pred. No.
1ve 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Simon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GOLDSTEIN & FOX P.L.L.C
N. W., Suite 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.3e-16;
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; MOLECULE TYPE: protein US-08-836-325-10
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                                                                            ; MOLECULE TYPE: US-09-457-571-10
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   Query Match 85.7%; Score 24; DB Best Local Similarity 100.0%; Pred. No. 3.: Matches 24; Conservative 0; Mismatches
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Best Local
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FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US
FILING DATE: 02-NOV-1995
PRIOR APPLICATION UNMBER: 08/482
PILING DATE: 07-UN-1995
PRIOR APPLICATION UNMBER: 08/334
APPLICATION UNMBER: 08/334
APPLICATION UNMBER: 08/334
APPLICATION TOMBER: 08/334
APPLICATION TOMBER: 08/334
APPLICATION TOMBER: 08/334
APPLICATION TOMBER: 08/334
ATTORNEY/AGENT INFORMATION:
NAME: LINGWIG STAYOR P.
                                                                                                                                                                                       TELEFAX: 202-371-2540
INFORMATION FOR SEQ ID NO:
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COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

CURRENT APPLICATION DATA:
                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 1984 amino aci
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APPLICANT: Mandel, Gail
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 514
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 1100 CONTROL Washington
                                                                                                                                                                                                                                                              NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE: 09-DEC
                                                                                                                  TOPOLOGY:
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24; Conservative
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1100 New York Ave.,
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100.0%; Pr
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%; Pred. No. 3.3
0; Mismatches
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DB 4; Lc
3.3e-16;
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                                        Length 1984;
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                                                                        Matches
                                                                                                              Query Match
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TELEPAX: 202-371-2540
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                     PILING DATE: 02-NOV-1995

PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/482,401
PILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334,029
PILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/00/836,325 FILLING DATE: 2-MAY-1997
                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C
STREET: 1100 New York Ave., N. W., Suite 600
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                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION:
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                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                         TYPE: amino acid
STRANDEDNESS: no
                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 0917.0240002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: PCT/US95/14251
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                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                     NAME: Ludwig, Steven REGISTRATION NUMBER:
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                                                                                                                                                                                                                                                  ENGTH:
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                      5 FVSYIIISFLVVVNMYIAVILENF 28
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FVSYIIISFLVVVNMYIAVILENF 1763
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                                                                          Conservative
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Pred. No.
                                                                          Mismatches
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                                                                                                              DB 3;
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RESULT 21 US-08-836-325-12

Sequence 12, Application US/08836325

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RESULT 22
US-09-457-571-11
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Matches
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                                                                                                                                                                  Sequence 11,
                                                                                                                                            Patent No. 6703486
                                                                                                                                                                                                                                                                                                                                                                                           Query Match
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INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 1989 amino acids
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ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Borden, Laurence A.
TITLE OF INVENTION: Peripheral Nervous System Specific
TITLE OF INVENTION: Sodium Channels, DNA Encoding Therefor, Crystallization,
TITLE OF INVENTION: X-ray Diffraction, Computer Molecular Modeling, Rational
TITLE OF INVENTION: Drug Design, Drug Screening, and Methods of Making and Using
TITLE OF INVENTION: Thereof
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PRIOR APPLICATION DATA:
APPLICATION UMBER: PCT/US95/14251
FILING DATE: 02-NOV-1995
PRIOR APPLICATION DATA:
                                          TITLE OF INVENTION:
                                                                                 APPLICANT: Mandel, Gail APPLICANT: Halegoua, Si
                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
TELEPHX: 202-371-2540
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ATTORNEY/AGENT INFORMATION:
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FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/3:
FILING DATE: 02-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/836,325
FILING DATE: 2-MAY-1997
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  TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: not
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
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                                                                                                                                                                  Application US/09457571
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1100 New York Ave.,
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100.0%; Pred. No. 3.3e-16;
Peripheral Nervous System Specific Sodium Channels, DNA Encoding Therefor, Crystallization, Sodium Channels, DNA Encoding Therefor, Crystallization, X-ray Diffraction, Computer Molecular Modeling, Rational Drug Design, Drug Screening, and Methods of Making and Using
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N. W., Suite 600
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RESULT 23
US-09-457-571-12
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                                                                                                                                                                                                                                                                                    Sequence 12, Application US/09457571 Patent No. 6703486
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 09-DEC-1999
CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/836,325
FILING DATE: 02-MAY-1997
PRIOR APPLICATION DATA:
APPLICATION UMBER: PCT/US95/14251
FILING DATE: 02-MOV-1995
PRIOR APPLICATION DATA: 08/482,401
APPLICATION UMBER: 08/482,401
FILING DATE: 07-JUN-1995
PRIOR APPLICATION DATA: 08/334,029
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORWATION:
NAME: LINGWIS SEPVEN R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
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                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                           TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
COFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/457,571
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                                                                                                                                                                                                                            APPLICANT: Mandel, Garanticant: Halegoua,
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                                                                                             CORRESPONDENCE ADDRESS
                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 1100 New CITY: Washington
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
STRANDEDNESS: no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Ludwig, Steven R. REGISTRATION NUMBER: 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER:
                                   CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
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                                                     STREET:
                                                                       ADDRESSEE:
COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                     1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24;
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                                 Washington
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                                                       E: STERNE, KESSLER,
1100 New York Ave.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
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USA
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                                                                                                                                                                                                                                                  Mandel, Gail
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               85.7%; Score 24; DB 4; 100.0%; Pred. No. 3.3e-1 rative 0; Mismatches
                                                                                                                             Peripheral Nervous System Specific Sodium Channels, DNA Encoding Therefor, Crystalliza X.-ray Diffraction, Computer Molecular Modeling, Rat Drug Design, Drug Screening, and Methods of Making Thereof
                                                                       KESSLER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     36,203
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                                                       GOLDSTEIN & FOX P.L.L.C
N. W., Suite 600
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US-08-605-284B-16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 16,
Patent No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: 12: SEQUENCE CHARACTERISTICS: LENGTH: 1989 amino acids
                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                    APPLICANT: WALEWSKI, JOSE L.
APPLICANT: RECIO-PINTO, ESPERANZA
TITLE OP INVENTION: VOLTAGE GATED SODIUM CHANNELS FROM
TITLE OP INVENTION: HUMAN PERIPHERAL NERVE
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS;
ADDRESSE: NIXON, HARGRAVE, DEVANS & DOYLE LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: not relevant
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Ludwig, Steven R.
REGISTRATION NUMBER: 36,203
REFERENCE/DOCKET NUMBER: 09
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 514

PRIOR APPLICATION NUMBER: 08/836,325

PRIOR APPLICATION NUMBER: 02-WAY-1997

PRIOR APPLICATION NUMBER: PCT/US95/14251

APPLICATION NUMBER: PCT/US95/14251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-BOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/334,029
FILING DATE: 02-NOV-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOPTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/457,571
                                                                                                                                                                                           STREET: CLINTON, HARGRAVE, DEVANS & DOYLE LLP CITY: ROCHESTER STATE: NEW YORK COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
                 APPLICATION NUMBER: US/08/605,284B FILING DATE: 09-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 08/4 FILING DATE: 07-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 02-NOV-1995
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1740 FVSYIIISFLVVVNMYIAVILENF 1763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24; Conservative
                                                                                                                                                                                     14603
                                                                                                                                                                                                                                                                                                                                                                                                                                                       6, Application US/08605284B 6060271
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100.0%; Pred. No. 3.3e-16;
ative 0; Mismatches 0;
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   Matches
                    Query Match
Best Local Similarity
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Best Local (
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TELEPAX: 716-263-1600
INFORMATION FOR SEQ ID NO: 16:
                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO: 10:
                                                                                                                                                                                                                               REGISTRATION NUMBER: 34,103
REFERENCE/DOCKET NUMBER: 19
TELECOMMUNICATION INFORMATION:
TELEPHONE: 716-263-1636
                                                                                                                                                                                                                                                                                                      FILING DATE: 09-FEB-1996
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: BRAMAN, SUSAN J
                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/605,284B
                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: WALEWSKI, JOSE L.

APPLICANT: RECIO-PINTO, ESPERANZA

TITLE OF INVENTION: VOLTAGE GATED SODIUM CHANNELS FROM
TITLE OF INVENTION: HUMAN PERIPHERAL NERVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER: 34,103
REFERENCE/DOCKET NUMBER: 19
TELECOMMUNICATION INFORMATION:
TELEPHONE: 716-263-1636
                                                                                       TOPOLOGY: linear MOLECULE TYPE: prot
                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION: NAME: BRAMAN, SUSAN J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: protein .
                                                                                                                     TYPE: amino acid
STRANDEDNESS: not
                                                                                                                                                                                                 TELEPHONE: 716-263-1600
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STRANDEDNESS: not
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                                                                                                                                                              LENGTH:
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                                                                                                                                                              310 amino acids
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CLINTON SQUARE, P.O. BOX 1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        310 amino acids
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   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60.7%; Score 17; DB 3; Liarity 100.0%; Pred. No. 7.9e-10; Conservative 0; Mismatches 0;
                                                                                       protein
                                                                                                                         not relevant
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57.1%; Score 16; DB 3; I
100.0%; Pred. No. 8.2e-09;
tive 0; Mismatches 0;
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                                   Length 310;
   Indels
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 Gaps
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Search completed: January 27, 2005, 17:54:20 Job time : 23.5 secs

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